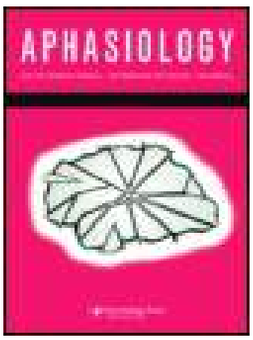

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Different approaches in aphasia assessments: a comparison between test and everyday conversations

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ABSTRACT

Background: When it comes to aphasia assessments, many speech and language pathologists (SLPs) rely heavily on norm-referenced language tests, even though they are aware that certain important language skills can only be evaluated by analysis of conversational discourse. The formalized aphasia test situation is a typical example of institutional interaction, which differs in systematic ways from everyday conversations. This article examines conversations between persons with aphasia (PWAs) and SLPs in the two different contexts, a topic where previous research is limited.

Aims: The aim is to compare the interactions between PWAs and SLPs in test conversations and in more everyday-like conversations and to relate the interactional data to the participants' performance on the aphasia test battery.

Methods & Procedures: Ten PWAs and three SLPs participated in the study. Each PWA participated in two conversations with an SLP, a test conversation, while performing tasks targeting the ability to produce sentences and narratives from an aphasia test battery, and a more everyday-like conversation. The conversations were audio and video recorded and thereafter transcribed. Three main observations considered to be important mechanisms for interaction organization were identified and calculated in the transcriptions. The test results were summarized and analyzed.

Outcomes & results: The results demonstrated that there were a larger number of turns produced by the PWAs in the everyday conversations compared to the test conversations. Furthermore, there were more communicative initiatives and nonverbal contributions in the everyday conversations. The number of repairs initiated by the PWAs were equivalent, but looking at repair characteristics, it was found that repairs resolved within the same turn were found in the test conversations while repairs stretching over several turns were more frequent in the everyday conversations.

Conclusions: The results of the present study demonstrated differences of the interaction between PWAs and SLPs in test conversations and in more everyday-like conversations. Furthermore, there seemed to be no obvious relationship between the participant's actual test scores on the aphasia test battery and aspects of conversation that can be related to being a competent speaker.

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Introduction

In clinical assessments of persons with aphasia (hereafter abbreviated PWAs), standardized aphasia test batteries, or selected subtests of standardized aphasia test batteries are frequently administered by speech and language pathologists (hereafter abbreviated SLPs). The formal assessment plays a central role when it comes to diagnosing aphasia and providing a detailed description of the type and severity of the condition. The formal assessment can be made to get a detailed overview over linguistic strengths and weaknesses and is often conducted repeatedly to observe changes over time. The results are often used as a basis for therapy and play an important role in the planning of the often individualized intervention (Goodglass & Kaplan, 1983).

Nevertheless, certain language skills can be assessed only by conversational discourse sampling and analyses. Even though the formal assessment is an important part of the aphasia evaluation process, it tends to give decontextualized results that provide little information about connected speech and certain language skills like turn-taking, repairs, and topic management (Murray & Coppens, 2013). However, the conversation-based assessment is time-consuming and challenging in many ways (Bryant, Fergusom, & Spencer, 2016). Conversations are highly context-dependent, and the purpose of the interaction, like the systematical differences between institutional interaction and non-institutional conversations, plays a significant role for our communicative behavior (Heritage, 2004; Linell & Luckmann, 1991). The interaction in a formal test situation, such as between an SLP and a PWA, can be said to be a typical example of institutional conversation, separated from everyday conversations, that are ordinary, often informal, with content and turn-taking not established in advance (Drew & Heritage, 1992; Wilkinson, 2010).

It cannot be assumed that the way a PWA interacts with an SLP within the institutional context necessarily reflects the way they interact in everyday conversations (Wilkinson, 2010). In this article, the intention is to compare the interactions between PWAs and SLPs in test conversations and in more everyday-like conversations and to relate the interactional data to the participants' test results. The reason for choosing this comparison is to gain information that may be useful in the clinical setting. The results emphasize the importance of combining the formal aphasia testing with an assessment focused on more everyday-like conversations.

Institutional conversation and everyday conversations

In contrast to everyday conversations, where roles normally are more fluid, communicative actions in institutional contexts can be regulated due to predetermination, depending on the formality of the particular institution that is considered. It is argued that this interactional asymmetry may imply a social distance between participants in institutional situations (Linell & Luckmann, 1991).

Drew and Heritage (1992) summarize three main features of institutional conversations: (1) that the interaction normally involves the participants in specific goal orientations that are tied to their institution-relevant identities, (2) the interaction involves special constraints on what will be treated as allowable contributions, and (3) the interaction will involve special inferences that are particular to specific contexts. There

are, however, also sequences within an institutional setting that are similar to everyday conversations following the same turn-taking organization.

Everyday conversation or everyday talk is sometimes equated with the term functional conversation, and refers to everyday conversational situations and activities (Holland, 1982). Everyday conversations are ordinary and often informal, which means that turn-size, turn order, and turn distribution are not fixed. They can be characterized by their unplanned nature and unpredictable outcomes, where participants cannot know or predict how much or in which order the other participant(s) will contribute (Sacks, Schegloff, & Jefferson, 1974). Another salient feature is the spontaneously created and negotiated topics. According to Brown and Yule (1983, p. 89) topics of everyday conversations "are not fixed beforehand but are negotiated in the process of conversing". The everyday conversations also include an affective quality, which involves one's connectedness with the interlocutor(s) as well as the responsiveness of their contributions (Tannen, 1985). The participant's assessment of an interlocutor's contributions is usually positive, and even though face-threatening situations do occur, they are often concealed by hedges in order to help conversational partners to maintain face (Goodwin & Goodwin, 1992).

Test conversations and everyday conversations involving PWAs and SLPs

The purpose of the formal aphasia assessment is to establish the individual's current communicative, linguistic, and cognitive level. The formal assessment aims are to identify the presence, character, and severity of the disorder, as well as to map the strengths and weaknesses of language (Murray & Coppens, 2013). However, there is a consensus among researchers that the formal aphasia assessment solely is not sufficient when it comes to getting an accurate picture of an individual's communicative proficiency (Damico & Simmons-Mackie, 2006; Davis & Wilcox, 1985; Lesser & Milroy, 1993). To make appropriate clinical decisions, clinicians typically combine formal assessments with informal assessment. In an informal assessment, the clinician needs to glean as much information as possible from the PWA's behavior and response, both in social environments and in the clinical setting. The process is described as a fluid exercise in critical thinking and a process of seeking answers rather than a process of steps (Murray & Coppens, 2013).

When it comes to assessing the nature and severity of aphasia and determining how PWAs use language in communication, results from extensive surveys show that SLPs in Sweden rely heavily on norm-referenced language tests even though they are aware of the benefits with a combined assessment process (Blom Johansson, Carlsson, & Sonnander, 2011; Carlsson & Eriksson, 2008). As a reason for this, absence of explicit guidelines and limited time and resources in the clinics were given as potential explanations by the Swedish SLPs (Blom Johansson et al., 2011).

Conversations between SLPs and PWAs in the clinic may be examples of institutional interaction. The interaction is often asymmetric and the situation might involve potential face-threats (Holck, Dahlgren Sandberg, & Nettelbladt, 2009). This probably is particularly applicable on the communicative actions within the test situation, due to its regulations and that its conditions are predetermined in advance. Since the manual for most formal aphasia/linguistic test batteries (like the one carried out in the present study) does not

allow the therapist to help the PWA with the answers on the different tasks, there is a certain risk of face-threatening situations; i.e., a failure to provide a response/answer might imply that the PWA is less capable and thus his/her social position will be jeopardized.

With institutional conversations and the everyday conversations between PWAs and SLPs in mind, the interest of an examination of the characteristics of these different conversational contexts emerged. When involving conversations of persons with communication disorders like PWAs, repairs are normally of particular interest, due to the increased risk of potential trouble sources in aphasic speech. When it comes to the evaluation of aphasic conversations, repair organization is of particular interest due to word-finding difficulties, paraphasias, and atypical grammar (Milroy & Perkins, 1992).

Aphasic speech and repairs

Aphasic speech is, to a greater extent than typical conversation, characterized by a larger number of turns connected to repair work. The term "repair" is used to describe practices of managing different conversational trouble sources noted by participants in interaction. These problems can be in speaking, hearing, or understanding (Schegloff, 2000). Even though many repairs start with an error, there is no one-to-one relationship. The number and structure of repairs can be used as an indication of if and how the mechanism for dealing with the trouble source works (Schegloff, Jefferson, & Sacks, 1977).

Repairs managed by PWAs are not easily describable in terms of the system proposed by Schegloff et al. (1977), where trouble sources are resolved within a maximum of three turns and where self-initiated self-repairs are handled quickly, usually in the same turn in which the error appear and are the most frequent repair type. Instead, the repairs in aphasic speech are often managed collaboratively over many turns (Milroy & Perkins, 1992). This is mostly due to the diminished linguistic resources available to achieve self-repairs efficiently and directly (Goodwin, 1995). Hence, the conversation partners of PWAs have to take a more active role in maintaining intersubjectivity and resolving troubles, much more than in interaction with "typical" speakers (Laakso & Klippi, 1999). Without the assistance from the conversational partners, many PWAs will have difficulties reaching repair solutions (Laakso, 2003). In another study, Laakso (1997) found that people with fluent, Wernicke-type aphasia frequently initiated self-repair.

Institutional interaction, which the formalized test situation is a typical example of, differs in systematic ways from everyday conversations. Little is known about how those differences might be manifested and there is a limited amount of research on the topic (Wilkinson, 2010). Therefore, the examination of interaction between PWAs and SLPs in test conversations and more everyday-like conversations might lead to additional understanding that can be useful for the assessment processes.

Aim

The aim of the present study is to compare the interactions between PWAs and SLPs in test conversations and in more everyday-like conversations and to relate the

interactional data to the participants' performance on the aphasia test battery. This might be important knowledge for the aphasia assessment process, and implications may also be drawn to the intervention.

Method & material

Participants

Ten individuals diagnosed with aphasia were recruited between September 2013 and October 2015. Eight of the participants were recruited through a community-based day-care center, which they regularly attended. One patient had an ongoing rehabilitation contact and one was an inpatient in a rehabilitation clinic at the time of the meeting, both of them were recruited through their regular SLP. A language deficit was the only inclusion criteria, the time that had passed since the onset of aphasia and the degree of severity of the condition were no exclusionary factors. The participants needed to be able to comprehend aphasia-friendly information about the study to be able to indicate their consent. The only exclusion criteria for participating in the study were known neurodegenerative diseases heavily associated with language difficulties or memory problems, like Alzheimer's disease or primary progressive aphasias.

The participants (Table 1.) were five women and five men with aphasia and three speech and language pathologists (the first author and two other SLPs, all experienced in working with aphasia). The PWAs were aged 51–98 (with a mean age of 67 years, median 64.5 years) and had their aphasia as a consequence of ischemic or hemorrhagic stroke. The time since the onset of aphasia varied from three months to 10 years (with an average of 5.5 years,

Table 1. Characteristics of participants with aphasia.

Participant (SLP)	Age	Sex	Time post-onset	Primary aphasia symptom	Previous occupation
A1 (SLP1)	56	F	9 years	Expressive	Technical operator
A2 (SLP2)	73	M	3 years	Expressive	Saw mill worker
A3 (SLP3)	69	M	8 years	Receptive	Medical doctor
A4 (SLP3)	56	F	6 years	Expressive	Industry operator
A5 (SLP1)	66	M	6 years	Receptive	Officer
A6 (SLP3)	51	F	4 years	Expressive	Nurse's assistant
A7 (SLP1)	78	M	6 years	Expressive	Travel agency manager
A8 (SLP1)	60	M	10 years	Receptive	Machinist
A9 (SLP3)	63	F	3 months	Expressive	Machinist
A10 (SLP1)	98	F	5 years	Expressive	Shop assistant

Participant (SLP)	Education	Test results in "informative speech"	Clinical descriptions
A1 (SLP1)	12 years	75/80	Aphasia test results match norm data for healthy elderly, able to work part-time with adjusted tasks
A2 (SLP2)	9 years	43/80	Apraxia of speech
A3 (SLP3)	17 years	43/80	
A4 (SLP3)	12 years	0/10 (80)	Uses Filofax frequently in conversation
A5 (SLP1)	15 years	21/80	Dependent on aphasia-ID and other similar aids
A6 (SLP3)	9 years	29/50 (80)	Spanish is the first language
A7 (SLP1)	12 years	19/25 (80)	Speech affected by Parkinson's
A8 (SLP1)	9 years	47/80	Work part-time as part of a rehabilitation project
A9 (SLP3)	9 years	4/16 (80)	Inpatient at the time of data collection
A10 (SLP1)	9 years	61/80	

Gender: F = female; M = male

Test results in "informative speech": number of correct answers of carried out tasks in the test domain "informative speech". Maximum level of correct answers in brackets.

median 6 years). All of the participants lived at home except A9 who was an inpatient at the time of data collection. None of the participants were able to return to their previous occupation after their stroke. One was still able to work part-time with adjusted tasks in a new work place. Participants' written consent was obtained. Appropriate ethics approvals for the study were obtained from the Regional Board of Ethics (dnr 2012/443–31) and from participating hospitals' and day-care center's committees.

Materials & procedure

The conversations between the PWAs and the SLPs were carried out at one or two occasions. The meetings took place in either a rehabilitation clinic or in a day-care center for PWA. Two of the PWAs were already familiar with the SLP due to an ongoing rehabilitation contact, while it was the first time the two of them met in the remaining eight cases.

The one or two meetings included a test conversation, while carrying out tasks from the aphasia test battery "A-ning" (Lindström & Werner, 1995). The everyday conversations, held in the beginning of each meeting, were carried out without any pre-established topic. The SLPs were only instructed to have an everyday conversation with the PWA, similar to a conversation carried out in the beginning or the end of an assessment or intervention session with any patient. Although, in several cases, these interactions tended to focus around the weather, how the PWA got to the meeting, about their normal activities in the facilities, and also about the persona of the PWA, mainly because it was the first time most of the participating persons met each other. All conversations were first initiated by the SLP. In some of the conversations, the majority of the questions were posed by the SLPs, whereas the PWAs took more initiatives in others. Supported conversation, mostly pen and paper, were provided and used by the SLPs in some cases. Among the PWAs, some used personalized communication aids in the conversations. In the cases where the subjects met on only one occasion, there was a generous break between the two conversations.

The neurolinguistic aphasia examination, "A-ning", is a test battery for clinical use, aimed for the assessment of language abilities following brain injury. It is based primarily on neurolinguistic theories, which is the reason for not including non-verbal communication in the test (Lindström & Werner, 1995). The modalities that are examined are "informative speech", "repetition", "listening comprehension", "reading comprehension", "reading aloud", "dictation", and "informative writing". According to the manual, the test subject is able to reach maximum score when he or she is assumed to perform at his/her premorbid level. The test leader must consider eventual hearing impairments, a different mother tongue, stuttering, premorbid reading difficulties, etc. There are no time limits on the various assignments (Lindström & Werner, 1995). It is stated in the test manual that the test ought to be carried out as a whole, but if it is obvious that a person is incapable of performing a task, it should be excluded and the score equal to zero. An extensive survey among Swedish SLPs showed that it is the most used aphasia test in Sweden (Blom Johansson et al., 2011; Carlsson & Eriksson, 2008).

The test score enables the clinician to determine the severity of aphasia symptoms that can be related to the clinicians' evaluation of the functional communicative ability according to the manual (Lindström & Werner, 1995). In the present study, the aphasia test was in most cases not conducted entirely. A strive was to complete the tasks in the

modality "informative speech" to receive a quantitative score. The term "informative speech" in the test modality refers to the channel for language processing that controls the ability to deliberately formulate spoken expressions for certain content or specific information. The eight tasks in the modality vary in terms of stimuli and expected responses. Naming, verbal fluency, automatizations, descriptive and narrative speech are included (Lindström & Werner, 1995).

In rare cases, the test battery "A-ning" can be completed within an hour, but mostly, it is much more time-consuming and stretches over several sessions (Lindström & Werner, 1995). In the present study, the tasks were performed and corrected strictly following the test manual. There was no absolute need for a total test score since there was no plan for any quantitative comparisons between the participant's results. The heterogeneous group of participants in terms of working-pace, fatigability, and how talkative they were, alongside the variation of completed tasks led to a variety of the duration of the sessions between 58 min and 93 min. In average, the meetings lasted for 78.5 min (median 80.5 min) excluding breaks. The plan was to conduct all the tasks in the modality "informative speech" to reach a modality score, but this was not achieved for a few of the participants. The reason for limiting the test assignments was that it was obvious that some of the PWAs had no ability to perform certain tasks in the test battery due to the extent of their aphasia. This is shown in Table 1 by demonstrating the participants' score out of the performed tasks (with the maximum score in brackets). Apart from this, the test results in the modality "informative speech" were handled according to the instructions in the test manual (Lindström & Werner, 1995).

Data analysis

Each meeting was both video and audio recorded (with the researcher starting the equipment and then leaving the room). All the conversations were broadly transcribed according to conversation analytic principles (Goodwin & Heritage, 1990). The material was thereafter examined by the researchers and a few different factors of special interest emerged. After that, the first 10 min of the everyday conversations and the last 10 min of the test conversations were transcribed in a more detailed way and the transcriptions were carefully scrutinized. The reason for choosing the last 10 min of the test conversations was to capture the three tasks targeting the ability to formulate sentences and narratives in the domain "informative speech". The tasks include formulating sentences to pictures, free descriptions of a picture of a restaurant, and an explanation of a visit to a restaurant (without any visual stimuli). These were considered most similar to everyday conversations. The analysis indicated three main observations that differed between the two conversation types; these were coded and calculated, namely the number of non-verbal contributions, the number of communicative initiatives, and repairs initiated by the PWAs. The repairs were categorized in two groups: repairs resolved within the same turn, and repairs stretching over several turns. Furthermore, the number of turns in each 10 min extract was counted. A turn was defined as a prosodically coherent unit, with no interruptions by other speakers. Two of the 10 min transcriptions were independently scrutinized and coded by an experienced researcher in the field blinded to the original codes (the third author). The level of inter-rater agreement was 85%. When ambiguities occurred concerning the data, these were discussed and the decision was then made by consensus.

Results

The detailed analysis of the 10 test conversations and of the 10 everyday conversations between the PWAs and SLPs indicated some aspects that differed between the two conversational contexts. These aspects were summarized into three main observations:

(1) There was a difference in the number of turns in the two conversation types, with a larger number of turns in the everyday conversations.
(2) There was a larger number of communicative initiatives by PWA and use of non-verbal contributions in the everyday conversations.
(3) There was a difference in the repair organization in the two conversation types, with a larger number of repairs stretching over several turns in the everyday conversations.

Tables 2 and 3 illustrate the main observations for each of the PWA and a summary for each observation from the 10 min excerpts from the test conversations and the everyday conversations.

The difference in the number of turns between the two conversation types

As is illustrated in Tables 2 and 3, the numbers show that the most salient difference between the 10 min excerpts from the two conversation types is the

Table 2. Test conversations.

PWA	Number of turns	Communicative initiatives	Nonverbal contributions	Total nr of self-repairs	One-turn self-repairs	Several-turn self-repairs
A1	13	0	0	4	4	0
A2	50	0	0	9	9	0
A3	40	0	0	7	7	0
A4	77	5	9	1	0	1
A5	61	0	3	7	5	2
A6	54	1	1	4	3	1
A7	41	0	0	3	2	1
A8	65	0	1	7	6	1
A9	53	0	3	4	3	1
A10	42	1	0	5	0	5
Sum	496	7	17	51	39	12

Test conversations: the number of the main observations from the PWAs in the 10 min excerpt.

Table 3. Everyday conversations.

PWA	Number of turns	Communicative initiatives	Nonverbal contributions	Total nr of self-repairs	One-turn self-repairs	Several-turn self-repairs
A1	64	1	0	0	0	0
A2	108	2	1	6	1	5
A3	75	3	0	10	5	5
A4	118	1	35	6	1	5
A5	124	3	3	6	0	6
A6	95	1	1	9	4	5
A7	81	3	1	6	1	5
A8	112	2	2	10	2	8
A9	79	3	10	5	0	5
A10	63	4	0	0	0	0
Sum	919	23	53	58	14	44

Everyday conversations: the number of the main observations from the PWAs in the 10 min excerpt.

number of turns that the PWAs produced, with almost twice as many turns (919) from the PWAs in the everyday conversations compared to the test conversations (496).

Although the number of turns produced differs to a large extent between the participants (13–77 in the test conversations and 63–124 in the everyday conversations), that in-between difference seems to be approximately proportional in the two different conversational contexts. One example of this is A1 and A4 who produce 13 and 77 turns, respectively in the test conversation while the everyday conversation involves 64 and 118 turns, respectively. Albeit the tasks performed from the aphasia test battery during the 10 min differ, and the topics of the everyday conversations vary quite considerably, the difference in the numbers of turns seems to follow some comparable pattern, both between and within the participants (see Tables 2 and 3). This is highlighted in example 1, an excerpt from the everyday conversation between A1 and SLP1.

Example 1. (everyday conversation between A1 and SLP1)

1. SLP1: jaa mm (.) kunde du förstå va folk sa där på sjukhuset eller va det mest att (2.0) va det mest att det inte va va svårt att prata
   yes mm (.) could you understand what people were saying there in the hospital or was it mostly that (2.0) was it mostly that it not was was hard to talk
2. A1: jaa: (.) ja: (.) <mest att de va svårt å prata> (.) <ja hör ju va dom säger>
   yes: (.) yes: (.) <mostly that it was hard to talk> (.) <I hear what they are saying>
3. SLP1: jaa
4. A1: (3.0) <men sova mest>
   (3.0) <but sleep mostly>
5. SLP1: jaa
   yes

A1 is the PWA that produces the least number of turns if both contexts are taken into account all together. At the same time, he/she is the participant that has the best results on the aphasia test battery, a result that matches norm-data for healthy elderly. Example 1 from the everyday conversation between A1 and SLP1 highlights aspects of the speech of A1 that does not emerge from the test results. First, A1 has a slow speech rate (as seen in line 2 and 4). This is an aspect that the language test alone cannot target but that is made abundantly clear in the analysis of the conversations, and also shown by the low number of turns. Furthermore, A1 to some extent displays atypical grammar that partially resembles "telegram-style speech" in the everyday conversations (line 4). The latter has previously been described by Heeschen and Schegloff (2003), who showed that the percentages of telegraphic utterances of one patient were significantly higher in informal conversation with an SLP (compared to storytelling under formal test conditions).

Communicative initiatives and non-verbal contributions

There is a difference in the numbers of communicative initiatives as well as the non-verbal contributions produced by the PWAs in the two conversational contexts. Initiatives are more frequent in the everyday conversations (23 and 53) compared to the test situations (7 and 17). The occasions in which they occur in the test conversations have one factor in common; the topic has almost exclusively shifted away from the structured task toward a more everyday conversation.

Example 2. (everyday conversation between A9 and SLP3)

1. SLP3: hur är det me med träningsvärken då ((stryker händerna på låren))
   how is is the muscle fever then ((strokes hands over thighs))
2. A9: jaa du (3.0) hu ((skakar lätt på huvudet)) mhm mhm ((viftar vä pekfinger)) nu så (.) så (.) min min (.) dede tå å sen (1.0) du du du du du du du du du du ((pekar med vänster pekfinger mot vänster tinning på varje stavelse))
   yes you (3.0) hu ((shakes head lightly)) mhm mhm ((waves left index finger)) now then (.) so (.) my my (.) dede toe and then (1.0) du du du du du du du du ((points left index finger on left temple on each syllable))
3. SLP3: jaa
   yes
4. A9: jaa (1.0) ka dy dempedadu hm
   yes (1.0) ka dy dempedadu hm
5. SLP3: jaa (.) var det nån undersökning [då] ((pekar med höger pekfinger mot höger tinning))
   yes (.) was it some kind of examination [then]
6. A9: [jaa]
   [yes]
7. SLP3: okej
   okay
8. A9: du du du du (.) du du du du du du du du ((pekar med vänster pekfinger mot vänster tinning och hjässan på varje stavelse))
   du du du du (.) du du du du du du du du ((points left index finger on left temple and crown on each syllable))
9. SLP3: jaa:
10. A9: du du du du du du du du mm ((fortsätter peka))
    du du du du du du du du mm ((keeps pointing))
11. SLP3: jaha:↑ (.) ja menar du den på fredag när du ska kolla röntgen ((håller båda händerna som en hjälm runt huvudet))(1.0) jaha↑ den här ((skriver MR och visar A9))mren [(.)] på fredag

aha:↑ (.) yes you mean that one on Friday when you are going to check scan ((holds both hands like a helmet around her head)) aha↑ this one ((writes MRI and shows A9)) MRI (.) on friday

12. A9: [mm] jaa

[mm] *yes*

Example 2 is an excerpt from an everyday conversation that both contain a communicative initiative (line 2) and nonverbal contributions (line 2, 8, and 10). The example is taken from the everyday conversation between A9 and SLP3. At the time of the data collection, they already knew each other because of A9 being an inpatient at the rehabilitation clinic where SLP3 works. It has only been 3 months since A9 suffered from stroke, and apart from her aphasia, she has a right side hemiplegia, fatigue, and depression. A9 has a limited verbal ability. In the domain "informative speech" in the Aphasia test battery, she has only 4 correct answers out of 16 possible (the rest not carried out due to aforementioned reasons). The test results in the other domains are better, yet indicating that she also has substantial difficulties with hearing and reading comprehension.

In line 2 in example 2, A9 initially responds to SLP3's question about her muscle fever. After a pause she points her finger toward her left temple and makes the sound effect of an assumptive MRI scanner. She makes attempts to self-repair in line 4, 8, and 10 and eventually SLP3 understands what she means and confirms it in line 11. In the analyzed 10 min excerpt from the everyday conversation between A9 and SLP3, A9 makes 10 nonverbal contributions and 3 communicative initiatives (compared with 3 and 0 from the test conversation). Solely looking at the test results, where A9 only manages to express her first and last name with big difficulties as well as a barely understandable completion of two automated phrases, the results indicate a very limited expressive ability. However, the analysis of the everyday conversation, which example 2 illustrates, adds new information and displays aspects of competence in conversation. A similar pattern is also seen in the following example 3.

Example 3. (test conversation between A4 and SLP3)

1. SLP3: *((shows a note with the word "sign"))*
2. A4: *((points at the correct picture in the test material))*
3. SLP3: *((shows a note with the word "match"))*
4. A4: ojoj ((pekar på korrekt bild av en fotbollsspelare i testmaterialet)) mm:

   oh oh ((points at the correct picture of a soccer player)) mm:
5. SLP3: ((ler)) gillar du sport

   ((smiles)) do you like sports
6. A4: ((tar fram sin Filofax och bläddrar bland europakartorna tills hon hittar Spanien)) här ((pekar på Madrid))

   ((brings out her Filofax and browses through the pages with maps over Europe until she finds the page over Spain)) here ((points at Madrid))

7. SLP3: real madrid
real madrid
8. A4: här (pekar på sitt hjärta))
here ((points at her heart))

Similar to participant A9, A4 has a very low result on the aphasia test overall. Likewise, SLP3 chooses not to perform more than a few of the tasks in the domain "informative speech". Out of 10 potential answers, A4 is not able to answer any correctly. She has the ability to say the words "yes" and "no", but apart from that her expressive vocabulary is very limited. As opposed to A9 though, 6 years has passed since A4 suffered from her stroke. She is a very active person, participating in many social activities and is highly dependent on her main communication aid, which is a Filofax calendar.

Example 3 is an excerpt from the test conversation. In the task, SLP3 displays notes with written words and A4 is supposed to point at the equivalent image out from a page with nine pictures in the test material. In line 4, A4 takes a communicative initiative, with an emphasized "mm", related to the picture of the soccer player in the test material. In line 6 she uses the map in her calendar to express a nonverbal contribution when she points at the city of Madrid, saying "here". SLP3 seems to understand in line 7 and A4 confirms in line 8, using a gesture to express her warm feelings toward the soccer team.

A4 makes 9 nonverbal contributions in the test conversation and 5 communicative initiatives. When this happens though, like in example 2, A4 breaks the predetermined organization of the test conversation by departing from the pre-established agenda, with the forthcoming turns following the same turn-taking procedures as everyday conversation. In the everyday conversations, A4 makes 35 nonverbal contributions and 1 communicative initiative. These abilities, which are highlighted in the 10 min extracts, are important observations that are not revealed by the actual results on the aphasia test battery.

Repair organization in the two conversation types

Solely looking at the number of repairs initiated by the PWAs in the 10 min extracts from the two conversation-types; the quantities are rather similar (51 in the test conversations and 58 in the everyday conversations). However, looking at the characteristics of the repairs, Table 2 displays that there are in fact differences. The repairs resolved within the same turn are more frequent in the test conversations (39, compared to 12 in the everyday conversations), while the relation is the opposite when it comes to repairs stretching over several turns (44 in the everyday conversations, compared to 14 in the test conversations).

Example 4. (test conversation between A5 and SLP1)

1. SLP1: *((gives A5 a new text card))*
2. A5: ju: stch (3.0)((nynnar en melodi)) ett fåtti foten fåtten foken (2.0) uti folken jag tror på den ((pekar på felaktig bild))

ju: stch: (3.0) ((hums a melody)) one fotti foot fotten foken (2.0) uti folken I believe in that ((points at wrong picture)

3. SLP1: ja och vad står det där ((syftar på lappen))
yes and what does it say there((referring to the note))

4. A5: han känn strömberg en summen ke sö pa öppa dö öppa ((halvt nynnande)) jag vet i alla fall att dom äter att dom ska äta tillsammans va [((ohörbart))]
he know stromberg one summen ke so pa oppa do oppa ((half humming)) I know anyway that they eat that they will eat together right [((unhearable))]

5. SLP1: [mm] hon häller upp i glaset ((pekar på bilden))
mm she is pouring up in the glass ((points at the picture))

6. A5: jaa
yes

Unlike the PWAs in the two previous examples, A5 primarily has receptive aphasia symptoms. He has mainly fluent speech that many times is hard to understand the meaning of, alongside with comprehension problems. Just like A4, A5 uses communication aids frequently. In his wallet, he carries an "aphasia-ID" together with various personal things that can clarify when misunderstandings occur.

In example 4, SLP1 carries out a test assignment where the PWA is supposed to read out a sentence and thereafter point at the equivalent picture in a page with 6 possible different illustrations of events. In line 1, A5 receives a note with the sentence *"she is pouring up in the glass"* and then carries out a self-repair in line 2 when he repeatedly expresses the incomprehensible words "*fåtti foten"* until he seems satisfied and ends the turn by pointing at one of the a pictures in the test book (the picture that shows a woman filling a bottle). Since SLP1 accepts his utterance and choice, asking him to read the sentence on the card, the trouble source of the repair is interpreted to be resolved within the same turn.

Due to his more fluent aphasia, A5 talks rapidly and somewhat incoherent. Laakso (1997) describes how people with this type of aphasia ably and frequently carry out self-repair. This is applicable to the results of the present material, in which the participants with primarily receptive aphasia symptoms (A3, A5, and A8) initiate more self-repairs than the participants with more expressive aphasia (see Tables 2 and 3). An exception from this, however, is seen in the following example 5.

Example 5. (test conversation between A2 and SLP2)

1. SLP2: jaa: (.) vad händer här borta till exempel ((pekar i bilden))
yes: (.) what is happening over here for example ((points in picture))

2. A2: (6.0) hon (7.0) hon kommer ner pappusen (2.0) hon kommer med saduken
(6.0) she (7.0) she comes wid pappusen (2.0) she brings saduken

3. SLP2: okej
okey

Example 5 involves participant A2, whose test results display almost exclusively expressive difficulties. His test result in the domain "informative speech" is 43 correct answers out 80 (while he gets 37 out of 40 in "Hearing comprehension" and 40 out of 40 in "Reading comprehension). A2 initiates a comparatively large number of self-repairs, primarily in the test conversation. In example 5, A2 is describing the courses of events in a picture of a restaurant in the aphasia test battery. This type of self-repair, that is seen in example 5, is typical for A2, correcting his own mispronounced target words, probably due to his concurrent articulatory problems/apraxia of speech. In line 2, he repairs the word "pappusen" with "saduken" (both impossible to translate due to incomprehensibility in Swedish). This is accepted by SLP2 by her "okay" in the following turn. A possible explanation of this pattern of self-repairs in this case is that his speech to a large extent is affected by his apraxia of speech, characterized by irregular articulatory errors and attempts of self-correction (Patidar et al., 2013).

These types of repairs, that are resolved within the same turn like in example 4 and 5, are more frequent in the test conversations than in the everyday conversations in the analyzed material. This is hardly surprising due to the nature of the test situation, when there is no goal of establishing mutual understanding, at least from the therapist's point of view. It is also said in the test manual that the test leader should not reveal the correct answer on an assignment to avoid any potential learning effect (Lindström & Werner, 1995). The analysis of the test conversations shows that some of the PWAs try to initiate repairs by showing discontent over their problematic utterance. Despite the expressions of frustration, this is disregarded by some of the SLPs, which is seen in the following examples 6 and 7.

Example 6. (test conversation between A9 and SLP3)

1. SLP3: reparera
   repair
2. A9: demdadeda (2.0) neeh:
   demdadeda
3. SLP3: den var ganska lång
   ((that one was rather long))

In example 6, A9 is supposed to repeat what SLP3 says in line 1. The attempt from A9 is followed by a pause and the word "no/neeh", which can be interpreted as a mark of frustration. The SLP confirms that it was a long word (and therefore implicitly difficult), and pursues with the next task in the test. In example 7, A3 expresses doubts about the accuracy of his own utterances.

Example 7. (test conversation between A3 and SLP3)

1. A3: happ vad är det där nu då ((studerar bilden)) sese kanske eh bil också förstår du litegranna (.) där (.) jag tror det faktiskt (.) vad är det nu tror du: °humhumhumhumhumhumhum° (2.0) ah↑: jag tror allt tror jag (.) den där faktiskt (.) vad säger man då (2.0) just eh: (2.0) vad var det egentligen ja litegrann (.) det är ju kanske ett glas

möjligen (.) nä jag tror det är fel ja (.) men det där vet jag faktiskt inte

happ what is this then ((looks at picture)) sese maybe eh car also you understand a little (.) there (.) I think so actually (.) what is this now you think: humhumhumhumhumhumhum (2.0) ah↑: I believe everything I think (.) that one really (.) what do you say then (2.0) right eh: (2.0) what was that actually yes a little bit (.) it is maybe a glass eventually (.) no I think it is wrong yes(.) but that I don't really know

2. SLP3: ((nickar)) jaa jag tror du har gått igenom *hela bilden*

*((nods)) I think you have gone through the *whole picture**

A3 is a participant with primarily receptive difficulties. His test results in the domain "informative speech" are 43 out of 80 potential correct answers. The task in the test that is exemplified here show, however, that he has difficulties with making himself understood, as reflected in the everyday conversations. Example 7 involves several attempts from A3 to express something about a glass when he is describing the picture of the restaurant. In the end of the turn, he states that he believes that he is wrong and that he does not know. SLP3 then nods, says "yes" and says that she believes that A3 has gone through all the events in the picture (which is clearly not the case). These examples of repairs that are carried out and "resolved" (or possibly "rejected") within the same turn because even though the PWA indicates the problematic content, that is not responded to, nor confirmed by the SLPs. Example 8, taken from the everyday conversation between A8 and SLP1, can be compared with the two preceding examples.

Example 8. (everyday conversation between A8 and SLP1)

1. SLP1: vad jobbade du med (1.0) innan du fick stroken då

what did you work with (.) before you had your stroke then

2. A8: sett eh (3.0) ((skriver vad som ser ut som ett e med fingret på bordet)) eh e (4.0)

seen eh (3.0) ((writes what looks like an e with finger on table)) eh e (4.0)

3. SLP1: vill du skriva ((ger A8 en penna))

do you want to write ((gives A8 a pen))

4. A8: jaa ((börja skriva något)) får inte ut det

yees ((starts to write something)) can't get it out

5. SLP1: näe (.) börja [du]

noo (.) did you start

6. A8: [nä e e] ericsson

no e e ericsson

7. SLP1: på ericson↑ [jajaja] på den stora fabriken

at ericsson↑ yesyesyes at the big factory

8. A8: [ja visst] aa ja visst aa

yes right yes yes right aa

Examples 6 and 7 follow the pre-established "rules" of the institutional context (that are stated in the test manual), resulting in attempts of self-repairs that are "resolved" within the same turn (due to being disregarded by the SLP). In example 8, A8 initiates the repair by his attempts in lines 2 and 4 and by saying "can't get it out" in line 4. This is promptly heeded by the SLP and the trouble source is jointly resolved within the following lines. The context of the everyday conversation "allows" the interlocutor to help the PWA to achieve the repair effectively, which also means that they are stretched over a number of turns.

Discussion and conclusions

The results of the present study demonstrate differences of the interaction between PWAs and SLPs in test conversations and in more everyday-like conversations. Furthermore, there seems to be no obvious relationship between the participants' performance on the aphasia test battery and aspects of conversation related to being a competent speaker. Based upon these findings, there are a few issues that are important to discuss.

Even though the pattern of turn-taking is regulated in an explicit and predictable way in the test conversations, the finding that there were almost twice as many turns produced by the PWAs in the test interaction in the present material was not an obvious outcome. Given the heterogeneity among the PWAs' abilities to understand and produce language, it is understandable that the number of utterances vary substantially between the PWAs within the same context and time frame. However, it is noteworthy that the increase of turns between the two contexts was proportionally approximately the same for every participant, regardless of the type and severity of aphasia (see Tables 2 and 3). There was no clear relationship between the numbers of turns produced by the PWAs and their performance on the expressive assignments in "informative speech".

In the data, it was also found that there were a larger number of communicative initiatives and nonverbal contributions made by the PWAs in the everyday conversations. This is hardly surprising due to the highly organized topics and order of speakership in the test situation, a context that does not involve the PWAs new contributions to the conversation. However, there is also evidence in the data that PWAs can break away from the expected roles of the test conversation and follow the turn-taking procedure of an everyday conversation. This might be a sign of communicative competence and may also indicate that the boundaries between everyday and institutional conversations may be fluid.

Even though most PWAs strive to improve their verbal output, the ability to make own contributions in conversation and to replace absent spoken words with nonverbal contributions is obviously essential for an individual's ability to participate in conversations, especially for PWAs with a limited ability of verbal communication. It is noteworthy that several of the PWAs prove to be very communicative, by making initiatives and nonverbal contributions in the everyday conversations with the SLPs, even though they had great difficulties with the domain "informative speech" in the aphasia test. Important aspects of communication that go beyond information transferring are not necessarily captured in these test assignments. Thus, it is important that SLPs investigate

the ability to make initiatives and the nonverbal contributions when assessing aphasia and that they are aware that this might not be shown in a test situation.

Repairs are important mechanisms for the organization of language in social interaction and were of particular interest in the analyzed material, due to the importance and large number of repairs normally found in aphasic speech (Milroy & Perkins, 1992). Solely looking at the number of repairs initiated by the PWAs in the present data, an interesting finding was that there was no significant difference between the two conversational contexts. However, when the characteristics of the repairs were taken into consideration in the analysis, a finding was that repairs stretching over several turns were more frequent in the everyday conversations. In contrast to the repairs within the same turn in the test conversation, the SLPs took a more active role in resolving the trouble and demanding for resolutions in the everyday conversations.

The present study shows that some of the self-repairs that are initiated by the PWAs in the test conversations are made by the expression of negative feelings and marks of frustration. There are several examples where the SLPs do not respond to this and instead carry on the dialogue. It should be noted, however, that these kinds of responses from the SLPs are completely according to the manual for most formal/linguistic aphasia test batteries, even though this special turn-taking procedure, "turn-type preallocation", represents a certain risk of a face-threatening situation (Atkinson & Drew, 1979). Would these initiatives have been carried out by the PWAs in the everyday conversations, one might assume that they would have been responded to by the SLPs. On the basis of this, as well as on the general knowledge about the importance of the combined formal/informal aphasia assessment, one could discuss whether the SLPs should prefer to give the PWAs the correct answers or confirm their negative feelings. The test battery used in the present study does not capture number of repairs or repair strategies. When analyzing the test results and doing a qualitative analysis of more everyday-like conversations, it is important for SLPs to be attentive to repair mechanisms in both contexts.

The formal aphasia test battery solely is not sufficient when it comes to assessing aphasia and tailoring the intervention. The findings of the present study emphasize that testing of language processing on sound, word, and sentence level may give little information about connected speech or discourse. The results highlight the importance of an everyday conversation-focused assessment approach, in combination with the qualitative and quantitative analysis of the results from the aphasia test battery.

It should be noted as a limitation that the results from the everyday conversations between the SLPs and PWAs in the present study are not automatically transferable to the PWAs conversations in their everyday lives. This is due to the SLPs experience of aphasia and in using conversational strategies and support in interaction with PWAs. A further limitation is that there are no clear boundaries between institutional conversations and everyday conversations within the institutional setting. An additional limitation is that it is not certain that the participants for a number of reasons can choose not to treat something as problematic, even though it is. Moreover, the fact that some of the PWAs already had an ongoing rehabilitation contact with the participating SLPs might also have an impact on the results. The relationship

between the SLPs and the PWA may have an impact on phenomena like initiations and repairs, and it must be added as a limitation that the context of the study is not necessarily representative of the clinical setting between the clinician and the PWA. Furthermore, it is reasonable to believe that the various degrees and severities of aphasia among the PWAs, alongside with the variation of time that had passed since the onset of aphasia may have an impact of the results. The assignments in "informative speech" were not fully carried out due to some of the PWAs expressive difficulties and lack of ability to perform some of the tasks. It is not given that clinicians choose to adjust the test situation similarly, and the lack of a definite overall score in the test domain for every participant is a potential limitation.

Finally, clinical implications might be drawn from the present study, mainly regarding the importance of awareness of the differences between conversational contexts and factors that are not necessarily reflected through the formal aphasia assessment. Further studies of conversation in different assessment and interventional contexts are needed in order to obtain conclusive results.

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