

Improvement of fluency and listening skills in teenagers with advanced stuttering

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1 Introduction

Stuttering is a speech disorder characterized by an abnormally high frequency or duration of stoppages in the flow of speech, manifested as repetitions of sounds, syllables or words, prolongations of sounds and “blocks” of airflow or voicing in the speech. In persistent cases, core behaviours are usually accompanied by secondary behaviours, such as facial and bodily gestures, interjection of extra sounds and linguistic adaptations. The onset of stuttering generally occurs between ages 2 and 5, and there are more male than female persons who stutter (PWS). Although varying individually and contextually, the experience of stuttering may have limiting effects on certain aspects of life and communication for PWS (Guitar 2006).

Everyday conversation in face-to-face contexts is generally acknowledged as the primordial type of communication, the context in which identities and relationships are established and maintained. Therefore, an approach that seeks to explore the phenomenon of stuttering from an interactional point of view seems to be warranted. The qualitative research tradition has a long history in the social sciences. Some advantages of such approaches have been underlined by Tetnowski & Damico (2001:34f): “Researchers will be able to collect authentic data that are true representations of how stuttering impacts on individuals in the real world, [...] create a richer description of what stuttering is, [...] collect data from the perspective of the individual person who stutters, [...] focus on the PWS and their collaborations with their coparticipants within the social context.”

The present study is a pilot case study with two informants. The study includes systematic documentation of therapy and therapy outcome and highlights the importance of considering the fluency disorder within the framework of a socio-dynamic model of communication (Røkenes & Hanssen 2006). Our focus of therapy is two-fold: the improvement of listening skills in dyadic conversation and the increase of fluent speech production. For most advanced PWS the ultimate goal is “spontaneous “fluency” in all situations or, in other words, normal speech with its normal disfluencies” (Guitar 2006:393). However, according to Guitar, most advanced PWS do not reach this level of fluency as complete unlearning may not be possible. Thus, a more realistic goal in individual speech therapy is to alter the speech production towards controlled fluency.

As participants in conversation we need productive as well as receptive skills. In acquisition as well as in therapy we often see a primary focus on aspects of speech and language production. However, participation in conversation also requires a high degree of listening skills (Otnes 1999). Active listening involves being able to receive, understand, interpret and respond adequately to the co-participant’s contribution. In clinical practice, we meet quite a number of PWS who report spending a lot of their cognitive energy on monitoring and planning their own speech. In combination with possible negative thoughts prior to or during their own turns at talk, such self-monitoring may imply a decreased focus of attention in relation to contributions by other participants in the interaction. Successful participation in conversation involves taking active part in the interaction both as producer and recipient of verbal and non-verbal actions. Basing our study on a model of communication where the perspective of interaction is highlighted, the other- and self-perspectives are equally important. We are interested in measuring how the teenagers contribute to conversation both as speakers and as listeners. In light of this, we pose the following research questions:

1. What quantitative and qualitative changes are found in the use of specific markers of active listening pre- and post-therapy?
2. Are changes in fluency and listening skills reflected in the participants' self-evaluation and/or in the parental evaluation of their communicative competence?

2 Data and methodology

The participants in our study are two 17 year old male PWS, E. and R. They are both native Norwegian speakers without any history of dyslexia, specific language impairment or attention deficit disorder. Both of them have stuttered since childhood, and they have over several years received individual and group therapy, working on their own stuttering through phases of identification, desensitization and modification (Van Riper 1973, Guitar 2006). E.'s speech is characterized by repetitions of sounds and syllables, prolongations and "blocks". Head and eye movements are often present as part of secondary behaviour. R.'s speech is characterized by "blocks" of the airflow and prolongations of sounds, sometimes resulting in new "blocks". He has developed an inappropriate pattern of breathing in the form of heavy inhalations, and facial gestures are occasionally present.

Both E. and R. display advanced stuttering. According to Guitar (2006), advanced stuttering is usually accompanied by tension and struggle, as well as escape and avoidance behaviours. People with advanced stuttering sometimes turn down promotions if more speaking is required and will often not participate fully in group discussions and conversations. Both of the teenagers were positive when presented with the opportunity to participate in a three-day intensive therapy, and during the three days they showed motivation for working on their stuttering.

Two types of data were collected: a) videotaped conversations between E. and R. pre-therapy, immediately post-therapy and in a follow-up session one month post-therapy, and b) responses to WASSP questionnaires (Wright & Ayre 2000, Hansen & Knudsen 2006) by each of the teenagers and their mothers pre-therapy as well as in the follow-up session. In the videotaped conversations, E. and R. were asked to discuss given, but fairly "safe", topics (e.g. "What would you do if you had won a lot of money in the lottery?"). The conversations lasted for approximately ten to twenty minutes, and only E. and R. were present. WASSP is originally developed for use by the PWS him-/herself. In this project, the mothers responded to an abridged version of WASSP consisting of the questions related to stuttering, emotions and disadvantages.

The analysis of the conversational data was done in two steps, qualitatively and quantitatively. First the authors (two speech and language therapists and one linguist) looked at the recordings together and discussed general tendencies as well as particular and striking features. Then the initial three minutes of each conversation were transcribed orthographically by the first author, and the contributions by each of the participants were divided into turns. For each participant, the number of occurrences of particular verbal and non-verbal markers of active listening was quantified within these first three minutes of each conversation. This coding and quantification was done twice, firstly by the two SLTs in the projects collaboratively and then by all three authors together. The following pre-defined markers of listening were coded: verbal feedback in the form of minimal responses such as *ja* ('yes'), *mm*, *hm* etc. and non-verbal feedback in the form of gaze (the listener is looking at the speaker), head nods and smiles (including laughter).

Within the first three minutes of each conversation the frequency of stuttering for each participant was also registered by calculating the percentage of stuttered syllables in conversational speech. These fluency measures were scored by counting stuttering events (prolongations, repetitions and blocks) during extended contributions by each of the speakers. The stuttering events were computed as a percentage of the total number of syllables in the

passage. This calculation was done by the two SLTs. For E. and R. we consider their frequencies of fluency breaks to correlate with other estimates of their stuttering severity, although we have to emphasize that the percentage of stuttered syllables could be only one aspect of the problem. The responses to WASSP also reveal more covert features to be part of the problem complex.

Even though we have a general focus on interactive communication skills in this project, we do not exclude the individual approach with its focus on enhanced levels of fluency. We believe that if the teenagers are able to talk in a smooth and easy way with less struggle and muscle tension, it will positively influence their communication skills. The stuttering therapy we presented to E. and R. thus include a general and an individual approach. In the individual approach, therapy was designed for each of the teenagers, related to their specific type and degree of stuttering and their particular reactions to their stuttering. Here therapy was given on a strictly one-to-one basis. Both of them received therapy according to Gregory (2003): Easy Relax Approach – Smooth Movement. Some common components of the therapy included confrontation of words starting with different sounds, experimenting with different tension levels (awareness and reduction of physical tension), lighter articulatory contacts, and working on a more accepting attitude towards their own stuttering. One of them had to focus especially on his coordination of the breathing pattern in his speech production. In relation to his severe blocks, pull-outs were practised.

In the general approach, focus was put on common components of their speech disorder as well as on aspects related to good communication skills (e.g. the importance of good eye contact during conversation, the use of different types of verbal and non-verbal markers of listening). Information was presented e.g. in the form of role plays, and practical exercises were given. The two teenagers and one or two SLTs were present during these general sessions. The parents, represented by the mothers, also received information and counselling during these three days. The teenagers worked actively on their stuttering for about six hours each day, with approximately two hours for individual therapy and the rest for general, interactional therapy. They also had “homework” to do in the afternoons, and it was emphasized that ultimately they themselves are responsible for their own positive progress.

3 Results

The results show a decrease in overt stuttering and an enhanced use of fluency and stuttering modification techniques (Shapiro 1999, Guitar 2006, Manning 2007) for both E. and R. For R. this result is maintained one month post-therapy, whereas for E. – although there is a decrease in overt stuttering one month post-therapy compared to the pre-therapy measure – his use of fluency strategies that were taught during therapy has not been kept up. The real evaluation of these data depends on a more extended follow-up, which we plan to do one year post-therapy. Table 1 shows the percentage of stuttered syllables for each of the participants at the three points of measurement.

	Pre-therapy	End of three-day course	1 month follow-up	1 year follow-up
E.	15 %	7 %	10 %	?
R.	20 %	6 %	7,5 %	?

Table 1: Frequency of stuttering

As far as the use of specific listening markers (gaze contact with the speaker, non-verbal and verbal feedback signals) are concerned, analysis of the videotaped conversations show a fairly consistent and substantial use of such markers by R., pre- and post-therapy (both immediately following the therapy and at the follow-up session one month later). For E. there is a marked

increase in the use of these markers immediately post-therapy, a tendency which is also maintained one month after that. Some qualifying comments should be added here, though. Firstly, even though the recorded conversations are fairly symmetrical as far as division of turns and types of contributions is concerned, in all the analysed extracts, R. produces slightly more turns than E. This of course means that E. has more opportunities than R. for using markers of active listening. Nevertheless, overall, R. produces more such markers than E., thus displaying very actively his involvement and competence as a listener. Secondly, for these measurements we have only concentrated on a few signals that we have pre-defined as markers of listening. One may discuss whether these signals are used invariably as markers of listening or whether they may have other functions in the interaction, possibly in combination with their function as listening markers. Furthermore, there are of course other ways of displaying active listening than the use of these particular markers. By producing follow-up questions or comments related to the topic introduced by the speaker as well as by participating in collaborative co-construction of a turn, a participant may also display active listening. There is evidence in our data that both of the participants produce all these types of contributions, pre- as well as post-therapy.

The most striking difference between E. and R. is revealed in their responses on WASSP. The questionnaire is filled in twice, pre-therapy and one month post-therapy, by each of the teenagers and their mothers. Both of the mothers as well as R. have a lower mean score post-therapy, generally as well as for the individual categories on the questionnaire, indicating that they perceive the difficulties associated with stuttering as smaller at this stage than pre-therapy. E., on the other hand, has an opposite development, indicating that he perceives the difficulties associated with stuttering as more severe post-therapy. This is particularly evident in relation to the categories of emotions and disadvantages, as shown in table 2.

	E.		E.'s mother		R.		R.'s mother	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Stuttering	3.8	3.5	4.3	4.3	4	3.5	5.6	4.9
Emotions	3	5	4.2	2.6	4.6	3.6	5.2	4.6
Disadvantage	2.3	4.3	4.7	2	4.3	4	4	3

Table 2: Mean scores for three categories on WASSP

At this stage, we can only speculate on the reasons for this. Possibly the pre-therapy scores for E. indicate an inability or unwillingness to admit, even to himself, his own feelings and perceptions on stuttering. From a clinical point of view, we have had some doubts about E.'s motivation for therapy. We have seen evidence for this lack of motivation for instance in the conversation one month post-therapy, where E. does not show any attempt at using the fluency techniques that he was taught during therapy. E.'s responses on WASSP one month post-therapy may give us some clues as to the underlying causes of this lack of motivation, and as such may prove to be a new way into establishing individual goals for a comprehensive treatment approach.

4 Concluding remarks

In this paper, we have described an intensive therapy approach aimed at enhancing the amount of controlled fluency of speech and improving the listening skills of two male teenagers with advanced stuttering, E. and R. As a speech disorder, stuttering is overtly manifested as a decreased fluency of spoken language production. However, as speech is generally produced in and for interpersonal communication, stuttering often presents itself as a disorder with adverse effects on communication. Most obviously, stuttering may cause

problems for the individual in his or her role as speaker. However, stuttering may also have a negative impact on the listening skills of the individual. Conversation is probably the most ecologically valid communicative context, and for most clients, a main goal of therapy is to eliminate or reduce negative effects of the disorder in this type of context. The success of the therapy should also ultimately be measured in relation to everyday conversation.

The theoretical and practical framework of our project is a socio-dynamic model of communication. We believe that treatment should be carried out within a context which is as authentic as possible related to the clients' everyday conversations. Furthermore, we think that a focus on communication and conversational skills rather than solely on enhanced fluency will have a positive impact on the outcome of treatment. Consequently, we have tried to use an integrated approach in our treatment. At the same time, we underline the importance of a client centred approach where the client's needs and goals have the highest priority. If fluency goals are important for the client, they must be so for the clinician too. Stuttering intervention has to be a dynamic process where the client and the clinician work together to find the right "path" for this specific individual.

In the treatment described in this paper, therapy was directed both at the individual level of impairment (e.g. through practice in fluency-/stuttering modification techniques and reduction of secondary behaviours) and at the collaborative level of conversational participation (through raising the awareness of what active listening entails and practicing the use of specific techniques for active listening). To measure the outcome of the treatment, some fairly crude and simple quantifiable measures were taken pre- and post-therapy: the amount of four pre-defined types of listening markers in conversation and the degree of fluency in conversation. In addition, structured self- and other-reports on the degree of perceived difficulties associated with the stuttering was collected. These measures are simple enough to be obtained also in ordinary clinical practice.

Both E. and R. showed quite good communication skills, also in the pre-therapy conversation, even though their stuttering was severe. Both of them had explicit goals and concrete expectations concerning their speech production and level of fluency. Hence, we focused more on fluency strategies, stuttering modification techniques and reduction of secondary behaviours during the three days than originally intended. The most "unexpected" result of our study is E.'s responses on WASSP one month post-therapy, which suggest that he may benefit from establishing some new individual goals. In our opinion, he may also need to consider more realistically his own priorities in relation to treatment.

In order to maintain and stabilize the improvements of the therapy, both E. and R. need a local speech therapist with whom they can continue the process. Hopefully, in a long-term perspective, the teenagers will also become their own clinicians. In this paper, we hope that we are reporting the beginning of a story, which we intend to follow up more extensively.