

# Listener Perception Beliefs of Stuttering, Prolonged Speech and Verbal Avoidance Behaviors in People who Stutter

## La perception des croyances de l'auditeur au sujet du bégaiement, la parole prolongée et les comportements verbaux d'évitement chez les personnes qui bégaiant

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### KEY WORDS

STUTTERING

LISTENER PERCEPTIONS

SOCIAL ANXIETY

PROLONGED SPEECH

AVOIDANCE BEHAVIORS

### Abstract

Recent studies suggest that people who stutter fear listeners' negative reactions to their stuttering and that this social anxiety plays an important role in their everyday coping with stuttering. This study explores (a) what kind of negative perceptions are feared, and (b) whether these listener perception beliefs depend on how the person speaks. One hundred and six people who stuttered reported listener perception beliefs to five ways of speaking: (1) normal fluency, (2) stuttered speech (repetitions, prolongations, blocks), (3) prolonged speech learned in fluency shaping therapy, (4) hesitant speech (verbal avoidance behaviors like interjections and revisions) and (5) a mix of stuttered speech and hesitant speech. Each participant watched five video clips, each containing one way of speaking. Participants made quantitative judgments on each clip regarding listener perception beliefs of pleasantness, self-confidence, communicative competence, intelligence, social rejection and causal attribution.

It was found that people who stuttered expected fluent speech to be perceived most positively and hesitant speech most negatively. People who had undergone fluency shaping treatment in the past expected prolonged speech to be perceived more positively than stuttered speech, whereas people who had not undergone fluency shaping therapy expected no difference.

In the discussion section, speech-language clinicians are encouraged to integrate the analysis of listener perception beliefs and their implications for social anxiety into stuttering treatment.

### Abrégé

Des études récentes suggèrent que des gens qui bégaiant craignent les réactions négatives des auditeurs face à leur bégaiement et que cette anxiété sociale joue un rôle important dans la façon dont ils s'accommodent chaque jour de leur bégaiement. Cette étude explore (a) quelles sortes de perceptions négatives sont appréhendées et (b) si les idées qu'on se fait des croyances des auditeurs dépendent de la façon dont la personne parle. Cent six personnes qui bégayaient ont rapporté les idées qu'ils se faisaient de la perception des auditeurs devant cinq façons de parler : (1) un débit normal, (2) une parole bégayée (répétitions, prolongations, blocages), (3) un débit prolongé appris en thérapie axé sur le modelage de la fluidité, (4) un débit hésitant (comportements d'évitement verbal comme les interjections et les révisions) et (5) un mélange de parole bégayée et de débit hésitant. Chaque participant a regardé cinq clips vidéo contenant chacun une façon de parler. Les participants ont posé des jugements quantitatifs sur chaque clip concernant leurs croyances face à la perception de l'auditeur, sur ce qui est agréable, ainsi que sur la confiance en soi, la compétence communicative, l'intelligence, le rejet social et l'attribution causale. On a trouvé que les gens qui bégaiant s'attendaient à ce qu'un débit fluide soit perçu le plus positivement et qu'un débit hésitant soit perçu le plus négativement.

Les personnes qui avaient subi un traitement de modulation de la fluidité dans le passé s'attendaient à ce que le discours prolongé soit perçu plus positivement que le discours bégayé, alors que les gens qui n'avaient pas subi cette thérapie ne s'attendaient à aucune différence.

Dans la partie discussion, les cliniciens en orthophonie sont encouragés à intégrer l'analyse des croyances face à la perception de l'auditeur et de leurs répercussions pour l'anxiété sociale dans le traitement du bégaiement.

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## Introduction

According to recent studies, people who stutter (PWS) report more anxiety in situations where social evaluation might occur than people who do not stutter (e.g., Kraaimaat, Vanryckeghem, & Van Dam-Baggen, 2002; Messenger, Onslow, Packman, & Menzies, 2004). They often hide their stuttering (Petrunik & Shearing, 1983; Vanryckeghem, Brutten, Uddin, & Borsel, 2004) and feel ashamed and stigmatized (Corcoran & Stewart, 1998; Klein & Hood, 2004). PWS seem to fear listeners' negative reactions to stuttering, and to avoid stuttered speech in order to be perceived more positively (Plexico, Manning, & Levitt, 2009). Although it is not clear whether anxiety and avoidance cause stuttering directly, their clinical importance is beyond question (Manning, 2001).

The fear of being evaluated negatively by other people is often called social anxiety (Crozier & Alden, 2005). Most people show social anxiety in certain situations, like public speaking. It should not be confused with social phobia (or social anxiety disorder) which is an anxiety disorder characterized by intense fear in social situations causing considerable distress. Someone who is socially anxious in a certain situation usually has fearful thoughts (cognitive component of social anxiety), shows behavioral reactions like avoidance (behavioral component) and perceives physical sensations like sweating (physiological component). The present research focuses on the cognitive component of PWS's social anxiety, that is, the thoughts that lead PWS to the conclusion that dysfluent speech is something to be feared and avoided. While the cognitive component of, for example, test anxiety, is well researched (Zeidner, 1998), that of PWS's social anxiety is not. For example, do they fear they may give the impression that they are not intelligent, or that listeners may laugh at them? Furthermore, the present research explores whether those beliefs depend on how PWS speak. For example, do PWS expect more positive reactions to their post-therapy speech than to stuttering?

PWS may expect different types of listener reactions, resulting in different subtypes of beliefs. First, they may expect the listener to have negative perceptions of their personality and competencies. These beliefs about cognitive reactions to stuttered speech will be called *listener perception beliefs* from now on. Second, they may form expectations about negative long-term behavioral consequences of producing stuttered speech, for example, bullying or victimization at work. These beliefs are called *social rejection beliefs*. Third, they may anticipate how listeners think about the causes of the speaking problems (i.e., *causal attribution beliefs*, see Weiner, 1995).

## Listener perception beliefs

Quantitative data regarding listener perception beliefs are scarce. Blood, Blood, Tellis and Gabel (2001) found that adolescents who stuttered reported poorer self-perceived communicative competence than adolescents who did not stutter. However, self-perceived communicative competence may be correlated, but not identical to listener perception beliefs. Kraaimaat et al. (2002) reported that PWS feared and avoided speech acts like giving criticism, expressing an opinion, paying a compliment and initiating contact more than fluent people did. Recently, Menzies et al. (2008) found that many PWS feared being judged as unintelligent, incompetent, retarded, worthless or dumb. Similarly, qualitative research indicates that many PWS fear being judged as unintelligent, mentally retarded (Plexico et al., 2009), or mentally defective (Corcoran & Stewart, 1998). Cream, Onslow, Packman and Llewellyn (2003) examined the experiences of people who used prolonged speech (with some residual stuttering). Their participants reported difficulties in expressing their personality and communicating their emotions. In summary, little is known about the nature of the negative personality and competence judgments of which PWS are afraid. However, existing studies suggest that PWS expect to be perceived as emotionally and communicatively incompetent. These findings seem to concur with studies of how PWS are actually seen by fluent speakers, which will be described in the following.

These studies focused on *stereotypes*, that is, people's opinions about "stutterers" in general. MacKinnon, Hall and MacIntyre (2007) reviewed the literature on stereotyping and indicated that PWS are stereotyped as shy, insecure, reticent, guarded, avoidant, introverted, quiet, hesitant, self-derogatory, nervous, tense and afraid. Studies of *listener perception* examine how a PWS is perceived in a given situation, for example, shown in a video clip producing a monologue or reading a text (see further discussion in Von Tiling, 2011). That is, listeners are not asked to describe their opinions about "stutterers" in general, but about "this man/woman you have just seen". In a phenomenological analysis, Susca and Healey (2002) found that people listening to the speech of a PWS draw conclusions about the personality and competencies of the speaker (e.g., intelligence). This is of interest here because personality and competence judgments are likely to evoke PWS's social anxiety and shame. Susca and Healey (2002) found that the PWS shown in a video clip were perceived as nervous, awkward, not believable, low in intelligence, giving odd descriptions and having problems putting words and letters in the right order. Several quantitative studies (e.g., Panico, Healey, Brouwer, & Susca, 2005) found that

the more dysfluencies produced by a male who stuttered, the less he was perceived as a “competent speaker”.

According to both listener perception studies and stereotype studies, PWS may be regarded as (1) emotionally incompetent (e.g., nervous, awkward, self-derogatory), and (2) communicatively incompetent (e.g., not a competent speaker, giving odd descriptions, shy, quiet, introverted) (Von Tiling, 2011). *Emotional competence* includes the abilities to express and perceive emotions appropriately, to have good self-esteem, to have good relationships with other people and to be liked by other people (Petrides, Furnham, & Mavroveli, 2007). *Communicative competence* is the ability to adapt messages effectively and appropriately to the interaction context (Rickheit, Strohner, & Vorwerg, 2008; see also Blood, Blood, Tellis, & Gabel, 2001). Someone who is perceived as communicatively incompetent is seen as having problems in making his or her point clear, in making arrangements and in avoiding misunderstandings. These two dimensions have proven to be important in self-presentation research (Jones & Pittman, 1982) and also have been found in studies about stigma (Gabel, Blood, Tellis, & Althouse, 2004).

Von Tiling (2011) reported that listener perceptions were influenced by the PWS’s “way of speaking”. Listeners made judgments upon watching one of four randomly assigned speech samples. Each of the four video clips showed the same everyday conversation between three young men, but differed in the way of speaking. The excessive use of verbal avoidance behaviors like interjections, revisions, incomplete phrases and pauses made PWS look more emotionally and communicatively incompetent than the use of stuttered speech (core behaviors) or prolonged speech. There were no differences between stuttered speech and prolonged speech.

It is unknown if listener perception beliefs vary with the way of speaking used. For example, a person may have different listener perception beliefs when stuttering than when using prolonged speech. Such differences would be interesting because they might be helpful in, for example, explaining why PWS differ in their motivation to use prolonged speech. Furthermore, PWS’s listener perception beliefs regarding *prolonged speech* may depend on their own history of using prolonged speech. In our own clinical experience, the intensive training in using prolonged speech that is usually done in a group setting leads some clients to expect listener reactions to it to be more positive than they objectively are. They may not be able to realize that, as Von Tiling (2011) reported, there are usually no better listener perceptions of unnatural sounding fluent speech than of stuttered speech.

## Social rejection beliefs

Existing research indicates that many PWS do have social rejection beliefs (e.g., they feel socially rejected). This was found in qualitative studies (Corcoran & Stewart, 1998) as well as in quantitative studies. For example, Klein and Hood (2004) reported that more than 70% of PWS agreed that stuttering decreases one’s chance of being hired or promoted. According to Rice and Kroll (1994), 16% of PWS had been told that they would not be hired because of their stuttering.

## Causal attribution beliefs

There are no empirical studies of causal attribution beliefs of PWS. However, there are studies of causal attributions regarding stuttering made by listeners. Von Tiling (2011) showed that listener perceptions were partly dependent on the listeners’ causal attributions of speaking difficulties, that is, whether they assumed a chronic speech defect or a temporary problem. Boyle, Blood and Blood (2009) found that listeners who were told that stuttering had “psychological” origins showed more stigmatizing reactions to PWS than listeners who were told that stuttering had “genetic” origins. In the present work, the concept of stigmatizing will not be used because, being more or less able to choose between different ways of speaking, PWS do not necessarily have an easily identifiable stigma. Whereas Boyle et al. examined the effects of genetic and psychological attributions of stuttering on listener perception, Von Tiling (2011) was interested in the distinction of disorder attributions (i.e., internal, stable, uncontrollable attributions) vs. non-disorder attributions (i.e., internal, unstable, controllable attributions) of communication problems. For example, people who use prolonged speech may expect positive listener perceptions because they may believe that they cannot be identified as a “stutterer”.

## The present research

This study examined listener perception beliefs, social rejection beliefs and causal attribution beliefs to five ways of speaking that were defined following Von Tiling (2011): (1) normally fluent speech, (2) stuttered speech, i.e., a speech containing core behaviors (repetitions, prolongations and blocks), (3) prolonged speech, (4) hesitant speech and (5) stuttered/hesitant speech. Prolonged speech is a speech pattern that is learned in fluency shaping therapy (e.g., Webster, 1974). Its main characteristics are syllable prolongations, gentle voice onsets, smooth sound transitions and light articulatory contacts. Prolonged speech sounds less natural to listeners than normally fluent speech (e.g., Stuart & Kalinowski, 2004). The study by Cream et al.

(2003) suggests that people using prolonged speech may be aware of these negative naturalness judgments. Little is known, however, about listener perception beliefs of people using prolonged speech. *Hesitant speech* contains no core behaviors, but it does contain associated behaviors, such as interjections (starters, fillers), revisions, incomplete phrases and pauses that occur when the speaker seeks to avoid core behaviors (Guitar, 2006; Vanryckeghem et al., 2004). Hesitant speech contains more and longer interjections, revisions, incomplete phrases and pauses than the speech of most normally fluent people. It is, like stuttered speech, a form of coping with the feeling of stuttering, or, in a word, a form of stuttering. Petrunik and Shearing (1983) found that the hesitant and inappropriate communication behaviors implied in avoidance strategies can make the PWS look more emotionally disturbed and disagreeable than when stuttering. Since most PWS are not able or do not want to avoid every moment of stuttered speech, a combination of both stuttered speech and hesitant speech was examined as well, called *stuttered/hesitant speech*.

In the present study, PWS were expected to have negative listener perception beliefs regarding emotional competence, communicative competence and intelligence, and to expect social rejection when they were dysfluent. In addition, listener perception beliefs were expected to be dependent on causal attribution beliefs, that is, on how PWS expected listeners to think about the causes of the presented speaking problems. Furthermore, it was expected that people who learned prolonged speech in a fluency shaping treatment in the past differed in their responses from those who had not. In summary, five research questions were asked:

(R1) Do PWS expect more negative listener reactions to stuttered speech, prolonged speech, hesitant speech and stuttered/hesitant speech than to normally fluent speech?

(R2) Are there significant differences in listener perception beliefs and social rejection beliefs between stuttered speech, prolonged speech, hesitant speech and stuttered/hesitant speech?

(R3) Are there differences between different dimensions of listener perception beliefs, e.g., emotional competence, communicative competence, intelligence and social rejection?

(R4) Are listener perception beliefs associated with participants' history of fluency shaping treatment?

(R5) Are listener perception beliefs associated with causal attribution beliefs?

## Methods

### Participants

A total of 106 PWS (83 males, 23 females; 84 adults, 22 adolescents) agreed to participate in this study. The onset of stuttering obtained from self-report ranged from three to five years. All participants were native German speakers. Age and gender details are shown in Table 1.

Fifty-eight participants were recruited from the Kassel Stuttering Therapy program (KST; Euler, Gudenberg, Jung, & Neumann, 2009). KST is a modified version of Webster's (1974) Precision Fluency Shaping Program. It is a two-week intensive fluency shaping treatment program, including three weekend refreshers (one, three and six months after intensive treatment). Participants (labeled from now on as offline participants) were tested at one of these refreshers in the clinic. Twenty-two of these participants were adolescents (13-17-year-olds).

Forty-eight participants were recruited via postings in five popular German mailing lists about stuttering. The postings included an invitation to participate in an online study and a short description of the study's topic and time demands. Seventeen of these 48 online participants reported a history of fluency shaping treatment. More specifically, they reported having learned to use prolonged speech in the past, most of them at the KST ( $n = 13$ ).

Table 1 shows some details of these two samples, including self-reported stuttering severity and self-reported avoidance tendency. The former was rated on a 5-point scale ranging from 1 (*very mild*) to 5 (*very severe*), using the video clip containing stuttered speech (see description below) as a common standard for all participants (representing a "4"). For the latter, they were asked, "How often do you employ strategies to avoid stuttering in everyday life, like changing words, fillers etc.,?" using a 5-point scale (1 = *never*; 2 = *rarely*; 3 = *sometimes*; 4 = *often*; 5 = *always*).

### Stimuli

The participants watched five short video clips, each containing an everyday conversation between three young men. Four of them were the same as in the Von Tiling (2011) study, which did not use a fluent speech sample. The clips had been recorded with a digital video camera recorder (720 x 576 pixels). Before watching the clip, the participants were given the following background information about the clips: "Marcus happens to meet his colleague Stefan after a public event. Stefan introduces Marcus to his friend Kai. A conversation begins." Stefan and Kai are shown

Table 1. Number, gender, age, stuttering severity and avoidance tendency of different groups of participants.

Variable	Adults				Adolescents
	Participation		History of fluency shaping		(offline / fluency shaping only)
	offline	online	yes	no	
Number of participants	36	48	53	31	22
% males	81	79	79	81	73
Age, M (SD)	30.00 (9.37)	35.92 (13.32)	31.66 (10.22)	36.52 (14.52)	15.68 (1.09)
Self-reported stuttering severity (5-point), M (SD)	2.89 (1.13)	2.92 (1.11)	3.02 (1.08)	2.70 (1.15)	2.91 (.87)
Self-reported avoidance tendency (5-point), M (SD)	2.77 (1.24)	3.37 (1.01)	2.87 (1.10)	3.65 (.95)	2.57 (1.40)

standing in front of a wall and talking about the event, holding champagne glasses in their hands. Marcus enters the scene. Stefan and Marcus greet one another. Stefan mentions that Kai, a computer specialist, might help Marcus with his computer problem. A conversation begins in which Marcus explains his computer problem to Kai and Kai tells Marcus his solution to the problem. Finally, Marcus thanks Kai for his advice and asks Stefan to hold his glass while he goes to the toilet. During the whole clip, the three men are shown in full-length, there are no cuts.

Each of the five video clips shows the same conversation, but differs in Marcus's way of speaking. Marcus produces normally fluent speech in clip 1, stuttered speech in clip 2, prolonged speech in clip 3, hesitant speech in clip 4 and stuttered/hesitant speech in clip 5. The stuttered/hesitant sample (clip 5) contained fewer stuttered speech moments than clip 2 and fewer hesitant speech moments than clip 4, since a PWS may be able to reduce the frequency of core behaviors by using hesitant speech (Guitar, 2006). The goal was speech samples that are supposed to be comparable in severity. Some details concerning the five conditions are shown in Table 2 (and see Von Tiling, 2011, for further details). Stefan and Kai act as if no unnatural sounding speech were occurring. They listen patiently and maintain eye contact with Marcus.

Marcus was acted by a 35-year-old speech-language pathologist employed by the KST. He was himself a person who stuttered in the past, but has been normally fluent for seven years now. He was asked to simulate the speech of a person who is normally fluent (clip 1), stutters severely before therapy (clips 2, 4 and 5) and after successful KST treatment (clip 3). That is, in clip 3, he was told to imitate the prolonged speech of a person who, having previously stuttered severely, had completed the two-week KST treatment successfully. According to SSI-3 standards (Riley, 1994), clip 2 showed severe stuttering and clip 5 showed moderate stuttering.

Table 2 shows that the four videos differ in length. The reasons for this and resulting limitations of the present study are discussed in section 4.2.

Procedure

The setting was different for the two samples. For the offline sample, the video clips were presented in the KST therapy room. The clips were watched in a group of eight clients attending a refresher session. The clips were projected on a 4 meters<sup>2</sup> screen by a video projector and two loudspeakers were used. The clients were not allowed to talk to each other during the study, which took about 25 minutes. For the online sample, the participants watched the clips on their home PCs via the internet. The clips and the written instructions

Table 2. Duration, percentage of stuttered syllables (%SS) and other characteristics of the five speech samples (see Von Tiling (2011) for more details, including an online speech sample).

Condition attribute	(1) Fluent	(2) Stuttered	(3) Prolonged	(4) Hesitant	(5) Stuttered / hesitant
Clip duration (s)	67	91	100	141	110
% SS	0	20	0	0	9
Length of the three longest fluency breaks (s)	--	3/3/2 (core beh.)	--	7/5/3 (pause/filler)	2/2/1 (core beh.) 6/2/1 (pause/filler)
Fluency breaks (number)	No fluency breaks. General description: Normally fluent speech, appropriate in rate, rhythm and intonation	Repetitions (5), Prolongations (7), Broken words (6)	No fluency breaks. General description: 2-3 syllables per second, soft voice onsets, monotonous rhythm, natural intonation	Interjections (10), Revisions (5), Incomplete phrases (2), Pauses (4)	Repetitions (3), Prolongations (4), Broken words (2), Interjections (3), Revisions (2), Incomplete phrases (2), Pauses (2)
Physical concomitants (number)	--	Turns up his mouth slightly (5), Moves his head unnaturally (3), Poor eye contact while speaking (1)	--	Poor eye contact while speaking (7)	Turns up his mouth slightly (2), Moves his head unnaturally (2), Poor eye contact while speaking (4)

were exactly the same as for the offline sample. It was automatically confirmed that the required free software (Flash Player) was available and that internet speed was appropriate. Furthermore, reaction times were automatically recorded in order to exclude participants who had obviously not spent enough time working on the materials from the analysis.

The following descriptions are valid for both samples. On the first page (i.e., paper or web page), participants were told in colloquial language that the study was about perceived listener reactions to different ways of speaking often produced by PWS. On the second page, they were told that they were going to watch five video clips that differed only in the target person's way of speaking. They were informed about the background story to the video clips. Each participant (online sample) or group of participants (offline sample) was randomly assigned to one of five orders for video clip presentation. The Latin Square strategy was used to counterbalance sequential effects, and the five orders were: A:12543, B:24135, C:35412, D:43251, E:51324.

After watching each clip, the participants were asked four written questions (see also the Appendix):

- (1) "Now try to put yourself in Marcus's position. Imagine you would have been in this situation and would have spoken like Marcus did. How would you feel perceived by Kai who has just met you for the first time? — I would expect that Kai thinks I am... [nine items, see below]."
- (2) "I would expect that Kai thinks I have... [shown on a bipolar 7-point-scale] a chronic speaking disorder versus problems with speaking only in this special situation (e.g., because of nervousness)."
- (3) "How will my relationship with Kai probably develop in the future? [Two items, see below]."
- (4) "In the following, you can make additional comments in your own words."

The first question was designed to elicit listener perception beliefs and was measured on a 7-point bipolar adjective scale (1 = *very much*; 4 = *neutral*; 7 = *very much*). It was comprised of nine items that measures four attributes of listener perception beliefs, with some of these items being taken from the 25 adjective pairs by Woods and Williams (1976; translated into German by the author). The attributes and items measured were:

- Emotional competence: Pleasantness (*unfriendly–friendly, unpleasant–pleasant, dishonest–honest*)
- Emotional competence: Self-confidence (*anxious–composed, afraid–confident*)
- Communicative competence (*incompetent–competent; communicatively incompetent – communicatively competent; like someone who often causes misunderstandings – like someone who rarely causes misunderstandings*)
- Intelligence (*dull–intelligent*)

Only two sub-dimensions of the broad construct of emotional competence were measured, called pleasantness and self-confidence. The reason for this limitation was that, owing to the limited duration of the video clips, listeners may have found it difficult to rate more complex sub-dimensions like happiness or empathy (see Petrides et al., 2007). The more negative adjective was always on the left side of the scale in order to make the task easier for the participants.

The second question targeted causal attribution beliefs. The participant was asked whether he or she expected Kai to think that Marcus had “a chronic speaking disorder” (= 1; disorder attribution) or “problems with speaking only in this special situation (e.g., because of nervousness)” (= 7; non-disorder attribution), again on a 7-point bipolar scale.

In question three, the participant was asked to speculate whether Marcus would be socially rejected by Kai in the future. Considered on a 5-point scale (1 = strongly disagree; 5 = strongly agree), the two items were: “Because of my peculiar communication behavior, Kai probably would not like to make friends with me” and “Because of my peculiar communication behavior, Kai probably would not introduce me to his friends or invite me to a party.” Neither causal attribution beliefs nor social rejection beliefs were measured in the fluent speech condition. In question four, participants were invited to make additional comments in their own words.

These instructions were repeated for each of the five video clips.

### Data analysis

Online participants who watched some but not all video clips ( $n = 24$ ) were excluded from the analysis. Mean and standard deviation ratings were calculated for each quantitative item. The ratings associated with pleasantness, self-confidence, communicative competence, or social rejection were aggregated to produce mean ratings (see Table 3). Internal consistency scores (Cronbach’s Alpha) were calculated to test the

reliability of the resulting scales (e.g., pleasantness of prolonged speech). Cronbach’s Alpha scores ranged from 0.63 to 0.76 (pleasantness), from 0.75 to 0.80 (self-confidence), from 0.64 to 0.80 (communicative competence) and from 0.71 to 0.82 (social rejection). The five clip order groups (A/B/C/D/E, see above) comprised the following numbers of participants: 23/25/19/17/22: for the subgroup of adults without fluency shaping history: 7/7/5/5/7; for the subgroup of adults with fluency shaping history: 10/14/9/9/11; for the subgroup of adolescents with fluency shaping history: 6/4/5/3/4. Only 13% of the participants chose to make additional comments in their own words. Therefore, this item was excluded from the analysis.

## Results

### Listener Perception Beliefs and Social Rejection Beliefs of PWS (R1-R3)

Descriptive statistics of each aggregated score for each condition are shown in Table 3. Two-way mixed ANOVAs were calculated for each dependent measure, with video clip order as between-group independent variable and way of speaking as repeated-measures independent variable ( $N = 106$ ).

**Pleasantness.** Mauchly’s test indicated that the assumption of sphericity had been violated,  $\chi^2(9) = 23.41$ ,  $p < .05$ , therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ( $\epsilon = .97$ ). There was a significant main effect of way of speaking on pleasantness,  $F(3.89, 393.27) = 117.93$ ,  $p < .001$ ,  $\eta_p^2 = .54$ . ( $\eta_p^2$  stands for partial eta squares.) Bonferroni-corrected post hoc tests showed that all pairwise comparisons were significant (all  $ps < .001$ ), indicating that fluent speech ratings were highest (most pleasant), followed by prolonged speech, stuttered speech, stuttered/hesitant speech, and hesitant speech. There was no significant main effect of clip order on pleasantness,  $F(4, 101) = .25$ ,  $p = .91$ .

**Self-confidence.** Mauchly’s test indicated that the assumption of sphericity had been violated,  $\chi^2(9) = 28.23$ ,  $p < .05$ , therefore degrees of freedom were corrected by means of Huynh-Feldt estimates of sphericity ( $\epsilon = .96$ ). There was a significant main effect of way of speaking on self-confidence,  $F(3.82, 386.13) = 236.69$ ,  $p < .001$ ,  $\eta_p^2 = .70$ . Bonferroni-corrected post hoc tests showed that ratings of hesitant speech and stuttered/hesitant speech did not significantly differ ( $p = .23$ ), but all other pairwise comparisons were significant (all  $ps < .001$ ), indicating that fluent speech ratings were highest (most confident), followed by prolonged speech, stuttered speech and both stuttered/hesitant speech and hesitant speech. There was no significant main effect of clip order on self-confidence,  $F(4, 101) = 0.49$ ,  $p = .74$ .

Table 2. Means and standard deviations of participants' listener perception beliefs and causal attribution beliefs, as a function of the way of speaking shown in the video clip.

Variable (scale range)	Group of participants	(1) Fluent speech	(2) Stuttered speech	(3) Prolonged speech	(4) Hesitant speech	(5) Stuttered / hesitant speech
Pleasantness (7)	Overall ( <i>N</i> = 106)	6.01 (.80)	4.77 (1.07)	5.29 (.98)	3.79 (1.11)	4.27 (1.03)
	Adults without fluency shaping history ( <i>n</i> = 31)	6.12 (.71)	5.15 (.85)	4.86 (1.19)	3.99 (1.20)	4.54 (1.05)
	Adults without fluency shaping history ( <i>n</i> = 53)	5.84 (.88)	4.69 (1.14)	5.40 (.81)	3.76 (1.07)	4.16 (1.05)
	Adolescents with fluency shaping history ( <i>n</i> = 22)	6.24 (.66)	4.44 (1.06)	5.62 (.87)	3.58 (1.08)	4.17 (.97)
Self-confidence (7)	Overall ( <i>N</i> = 106)	6.32 (.80)	3.54 (1.41)	5.39 (1.21)	2.87 (1.21)	2.57 (1.08)
	Adults without fluency shaping history ( <i>n</i> = 31)	6.39 (.63)	3.76 (1.47)	4.90 (1.15)	2.82 (1.28)	2.73 (1.28)
	Adults with fluency shaping history ( <i>n</i> = 53)	6.14 (.91)	3.55 (1.45)	5.49 (1.24)	2.74 (1.13)	2.43 (.97)
	Adolescents with fluency shaping history ( <i>n</i> = 22)	6.66 (.61)	3.23 (1.20)	5.82 (.99)	3.27 (1.28)	2.66 (1.02)
Communicative competence (7)	Overall ( <i>N</i> = 106)	6.04 (.79)	3.62 (1.20)	4.95 (1.06)	2.51 (1.03)	3.10 (1.11)
	Adults without fluency shaping history ( <i>n</i> = 31)	6.23 (.62)	4.19 (1.24)	4.49 (1.22)	2.43 (1.01)	3.37 (1.11)
	Adults with fluency shaping history ( <i>n</i> = 53)	5.94 (.92)	3.48 (1.19)	5.07 (.93)	2.37 (.89)	2.92 (1.09)
	Adolescents with fluency shaping history ( <i>n</i> = 22)	6.05 (.66)	3.17 (.85)	5.29 (.92)	2.95 (1.27)	3.18 (1.14)

Intelligence (7)	Overall (N = 106)	5.60 (.97)	4.21 (1.19)	4.74 (1.25)	2.77 (1.14)	3.52 (1.13)
	Adults without fluency shaping history (n = 31)	5.77 (.84)	4.61 (1.02)	4.52 (1.36)	2.94 (1.26)	3.71 (1.13)
	Adults with fluency shaping history (n = 53)	5.40 (1.06)	4.13 (1.29)	4.68 (1.19)	2.74 (1.04)	3.42 (1.15)
	Adolescents with fluency shaping history (n = 22)	5.86 (.83)	3.82 (1.05)	5.18 (1.18)	2.64 (1.22)	3.50 (1.10)
Social rejection (5)	Overall (N = 106)		3.00 (1.03)	2.42 (1.00)	3.20 (1.12)	3.07 (1.08)
	Adults without fluency shaping history (n = 31)		2.92 (1.00)	2.94 (1.11)	3.44 (1.06)	3.06 (1.07)
	Adults with fluency shaping history (n = 53)		3.02 (1.11)	2.20 (.83)	3.19 (1.18)	3.08 (1.10)
	Adolescents with fluency shaping history (n = 22)		3.07 (.89)	2.25 (1.00)	2.91 (1.01)	3.02 (1.07)
Causal attribution (7) (small numbers indicate high disorder attribution)	Overall (N = 106)		1.91 (1.50)	2.92 (1.68)	4.24 (1.86)	2.25 (1.63)
	Adults without fluency shaping history (n = 31)		1.48 (.68)	2.03 (1.38)	4.03 (2.07)	2.06 (1.79)
	Adults with fluency shaping history (n = 53)		1.74 (1.50)	3.13 (1.72)	4.13 (1.82)	2.21 (1.56)
	Adolescents with fluency shaping history (n = 22)		2.91 (1.90)	3.64 (1.50)	4.81 (1.60)	2.59 (1.56)
Global perception (7)	Overall (N = 106)	5.94 (.68)	3.99 (.96)	5.02 (.94)	3.06 (.83)	3.41 (.85)
	Adults without fluency shaping history (n = 31)	6.06 (.50)	4.37 (.92)	4.59 (1.04)	3.11 (.92)	3.65 (.88)
	Adults with fluency shaping history (n = 53)	5.79 (.80)	3.90 (.99)	5.11 (.84)	2.96 (.70)	3.27 (.80)
	Adolescents with fluency shaping history (n = 22)	6.12 (.51)	3.66 (.79)	5.40 (.84)	3.23 (.98)	3.41 (.88)

**Communicative competence.** Mauchly's test indicated that the assumption of sphericity had been violated,  $\chi^2(9) = 34.39, p < .05$ , therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ( $\epsilon = .93$ ). There was a significant main effect of way of speaking on communicative competence,  $F(3.73, 376.62) = 232.71, p < .001, \eta_p^2 = .70$ . Bonferroni-corrected post hoc tests showed that all pairwise comparisons were significant (all  $ps < .001$ ), indicating that fluent speech ratings were highest (most communicatively competent), followed by prolonged speech, stuttered speech, stuttered/hesitant speech and hesitant speech. There was no significant main effect of clip order on communicative competence,  $F(4, 101) = 0.25, p = .67$ .

**Intelligence.** Mauchly's test indicated that the assumption of sphericity had not been violated,  $\chi^2(9) = 8.63, p = .47$ . There was a significant main effect of way of speaking on intelligence,  $F(4, 404) = 118.81, p < .001, \eta_p^2 = .54$ . Bonferroni-corrected post hoc tests showed that all pairwise comparisons were significant (all  $ps < .01$ ), indicating that fluent speech ratings were highest (most intelligent), followed by prolonged speech, stuttered speech, stuttered/hesitant speech and hesitant speech. There was no significant main effect of clip order on intelligence,  $F(4, 101) = 0.92, p = .46$ .

**Social rejection.** Mauchly's test indicated that the assumption of sphericity had been violated,  $\chi^2(5) = 20.90, p < .05$ , therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ( $\epsilon = .96$ ). There was a significant main effect of way of speaking on social rejection,  $F(2.87, 289.14) = 15.19, p < .001, \eta_p^2 = .13$ . Bonferroni-corrected post hoc tests showed that ratings of prolonged speech were significantly lower (indicating less social rejection) than ratings of stuttered speech, hesitant speech and stuttered/hesitant speech (all  $ps < .001$ ). Ratings of stuttered speech, hesitant speech and stuttered/hesitant speech did not significantly differ (all  $ps > .7$ ). There was no significant main effect of clip order on social rejection,  $F(4, 101) = 0.94, p = .44$ .

#### Listener Perception Beliefs and History of Fluency Shaping Treatment (R4)

To reduce the complexity of the analysis, a global score of listener perception beliefs was calculated, aggregating all nine items measuring pleasantness, self-confidence, communicative competence and intelligence. The resulting variable was called global perception beliefs (negative versus positive). Cronbach's Alphas ranged from 0.80 to 0.88. Three subgroups of participants were compared, namely adults without fluency shaping history (called NFS-adults from now on;  $n = 31$ ), adults with fluency shaping history (called FS-adults from now on;  $n = 53$ ) and adolescents with

fluency shaping history (called FS-adolescents from now on;  $n = 22$ ). Descriptive statistics are shown in Table 3.

A two-way MANOVA revealed that there was no significant effect of clip order ( $F(20, 360) = 2.86, p = .08$ ), but a significant effect of the subgroup variable on the five global perception belief scores,  $F(10, 176) = 3.80, p < .01, \eta_p^2 = .14$ , (i.e., the three different sub-groups differed in their ratings of at least one way of speaking). Bonferroni-corrected post hoc testing revealed that NFS-adults rated stuttered speech more positively but prolonged speech more negatively than both FS-adults and FS-adolescents (both  $ps < .05$ ).

To rule out the possibility that these effects may be owed to the different settings associated with the different samples (online versus offline), it was tested whether these differences could be found among online participants only ( $N = 48$ ; see Table 1 for details). There was a significant effect of the subgroup variable on the ratings of stuttered speech and prolonged speech,  $F(2, 46) = 5.20, p < .01, \eta_p^2 = .18$ . Univariate comparisons revealed that NFS-adults ( $n = 31$ ) rated stuttered speech more positively ( $p < .05$ ) but prolonged speech more negatively ( $p < .05$ ) than FS-adults ( $n = 17$ ).

Finally, two-way mixed ANOVAs were calculated for each of the three subgroups separately, with video clip order as between-group independent variable, way of speaking as repeated-measures independent variable and global perception as a dependent variable. There was no significant main effect of clip order on global perception beliefs in any of the three ANOVAs (all  $ps > .1$ ). Using Huynh-Feldt estimates of sphericity, significant main effects of way of speaking on global perception beliefs were found in all of the three ANOVAs: for NFS-adults,  $F(4, 104) = 62.38, p < .001, \eta_p^2 = .71$ ; for FS-adults,  $F(4, 192) = 109.41, p < .001, \eta_p^2 = .70$ ; and for FS-adolescents,  $F(4, 68) = 48.17, p < .001, \eta_p^2 = .74$ . Bonferroni-corrected post hoc pairwise comparisons showed different results for the three groups. NFS-adults rated fluent speech more positively than all other ways of speaking, and both stuttered speech and prolonged speech more positively than both hesitant speech and stuttered/hesitant speech (all  $ps < .01$ ). There were no differences, however, between stuttered speech and prolonged speech ( $p = .99$ ), and between hesitant speech and stuttered/hesitant speech ( $p = .07$ ). FS-adults rated fluent speech more positively than all other ways of speaking, followed by prolonged speech, stuttered speech and both hesitant speech and stuttered speech (all  $ps < .01$ ). The only non-significant pairwise comparison was between hesitant speech and stuttered/hesitant speech ( $p = .48$ ). FS-adolescents rated fluent speech more positively than prolonged speech, and prolonged speech more positively than stuttered speech, hesitant speech and

stuttered/hesitant speech (all  $ps < .01$ ). There were no differences between stuttered speech, hesitant speech and stuttered/hesitant speech (all  $ps > .9$ ).

Similarly, a two-way ANOVA showed that there was an effect of the subgroup variable on social rejection beliefs of prolonged speech,  $F(2, 91) = 5.85, p < .01, \eta_p^2 = .11$ . Bonferroni-corrected post hoc testing revealed that NFS-adults expected more social rejection due to prolonged speech than FS-adults ( $p < .01$ ). A two-way mixed ANOVA among NFS-adults showed no main effects of clip order or way of speaking on social rejection beliefs. However, among FS-adults, there was a main effect of way of speaking on social rejection beliefs,  $F(2.79, 133.85) = 11.31, p < .001, \eta_p^2 = .19$ . Bonferroni-corrected post hoc pairwise comparisons showed that FS-adults associated prolonged speech with less social rejection than stuttered speech, hesitant speech and stuttered/hesitant speech (all  $ps < .01$ ).

### Causal Attribution Beliefs (R5)

A two-way mixed ANOVA was calculated for causal attribution beliefs, with video clip order as between-group independent variable and way of speaking as repeated-measures independent variable ( $N = 106$ ). Mauchly's test indicated that the assumption of sphericity had been violated ( $\chi^2(5) = 13.96, p < .05$ ) and therefore degrees of freedom were corrected by means of Huynh-Feldt estimates of sphericity ( $\epsilon = .98$ ). There was a significant main effect of way of speaking on causal attribution beliefs,  $F(2.94, 293.86) = 40.77, p < .001, \eta_p^2 = .29$ . Bonferroni-corrected post hoc tests showed that ratings of hesitant speech were significantly higher (indicating fewer attributions to a "chronic speaking disorder") than ratings of stuttered speech, prolonged speech and stuttered/hesitant speech (all  $ps < .001$ ), and that ratings of prolonged speech were significantly higher than ratings of stuttered speech ( $p < .001$ ). All other pairwise comparisons were not significant. There was no significant main effect of clip order on causal attribution beliefs,  $F(4, 101) = 0.95, p = .44$ . Three two-way mixed ANOVAs for the different subgroups showed that the post hoc difference between stuttered speech and prolonged speech could only be found in the FS-adults group ( $p < .001$ ), not in the NFS-adults group or in the FS-adolescents group (both  $ps > .1$ ).

A two-way MANOVA revealed that there was no significant main effect of either clip order ( $F(16, 364) = 0.93, p = .53$ ) or the subgroup variable ( $F(8, 176) = 1.71, p = .1, \eta_p^2 = .07$ ) on the five scores of causal attribution beliefs. A two-way ANOVA, however, showed an effect of the subgroup variable on causal attribution beliefs of prolonged speech,  $F(2, 91) = 6.36, p = .01, \eta_p^2 = .12$ . Bonferroni-corrected post hoc testing revealed that

NFS-adults were more likely to expect prolonged speech to be attributed to a "chronic speaking disorder" than FS-adults and FS-adolescents (both  $ps < .01$ ).

The way FS-adults thought about prolonged speech compared with NFS-adults was further explored by correlational analysis. In the FS-adults subgroup, causal attribution beliefs of prolonged speech were associated with global perception beliefs ( $r = .31, p < .05$ ), social rejection beliefs ( $r = -.27, p < .05$ ) and avoidance ( $r = -.29, p < .05$ ). That is, the more the FS-adults expected prolonged speech to be attributed to a "chronic speaking disorder", the more they expected negative listener perceptions and social rejection, and the more they employed avoidance strategies. Of these three associations, only the third one was found in the NFS-adults group as well ( $r = .09, ns; r = .08, ns; r = -.27, p < .05$ ). Furthermore, in the FS-adults group, global perception beliefs of prolonged speech were associated with avoidance ( $r = -.37, p < .01$ ), whereas in the NFS-adults group it was not ( $r = -.13, ns$ ). That is, the more negative FS-adults expected listener perceptions to be, the more they used avoidance strategies. Including stuttering severity instead of avoidance in the analysis, no significant correlations were found. Furthermore, there were no significant correlations between causal attribution beliefs and global perception beliefs of stuttered speech, hesitant speech or stuttered/hesitant speech. No differential effects for age or gender were found in any of the reported analyses.

### Discussion

In this study, 106 PWS were asked to report their expectations of listener perceptions to different ways of speaking often used by PWS. Five short video clips were presented in order to provide a clear example to the participants of how each way of speaking sounded and how it might be perceived in an everyday conversation. The five ways of speaking not only included fluent speech, stuttered speech and prolonged speech, which had been studied in past studies, but also speech that contained verbal avoidance behaviors like interjections and revisions, called hesitant speech.

### Major Findings

PWS expected fluent speech to be perceived more positively than any of the four dysfluent ways of speaking (including prolonged speech, which is subsumed here in the term dysfluent speech). This result was found in all of the three subgroups of participants and all of the four dimensions of listener perception. That is, this group of PWS indicated that they feel they will be perceived as unpleasant, afraid, communicatively incompetent and unintelligent by a

listener when being dysfluent. At least for adults with fluency shaping history, these anxious cognitions seem to be directly related to the use of avoidance strategies, i.e., they may lead them to avoid feared words and situations.

Both hesitant speech and stuttered/hesitant speech were, however, expected to be perceived more negatively than any of the other ways of speaking. Using the same video clips as in this study, Von Tiling (2011) found that people who did not stutter indeed perceived hesitant speech and stuttered/hesitant speech more negatively than stuttered speech and prolonged speech. It can be concluded that – at least when listening to another PWS – many PWS are aware that the excessive use of verbal avoidance behaviors like interjections and revisions is likely to be less socially accepted than stuttered speech and prolonged speech. For most dimensions of listener perception beliefs, stuttered/hesitant speech received better ratings than hesitant speech. Medium to large effect sizes as well as the fact that the order of the video clips had no significant effect on participants' judgments indicate that the reported differences are clear and robust.

Stuttered speech and prolonged speech were rated differently depending on fluency shaping history. Adults and adolescents who had undergone fluency shaping treatment in the past expected better listener perceptions of prolonged speech than of stuttered speech, whereas adults without history of fluency shaping treatment expected no difference. Furthermore, between-group differences in the ratings of stuttered speech and prolonged speech were found. In the Von Tiling (2011) study, fluent listeners associated stuttered speech with more emotional competence than prolonged speech, whereas there were no differences in other dimensions (see Manning, Burlison, & Thaxton, 1999, for similar results comparing stuttered speech with another kind of post-treatment speech, namely stuttering modification). It may be concluded that people who learned prolonged speech in programs like the KST are likely to have unrealistically positive expectations of how this way of speaking is perceived by listeners. One reason for this may be the difference in causal attribution beliefs. NFS-adults were more likely than FS-adults to believe that listeners attributed prolonged speech to a communication disorder. FS-adults expected fewer disorder attributions to prolonged speech than to stuttered speech. Interestingly, the more disorder attributions they expected, the more negative they expected listener perceptions to be, and the more they used avoidance strategies in their everyday life. This correlational post hoc analysis suggests that some adults who learned prolonged speech in therapy use

prolonged speech in order to avoid being perceived as a chronic “stutterer,” that is, they use it as an avoidance strategy. They may use it because they think they will not be seen as a “stutterer,” and they use it only if they think they will not be seen as a “stutterer” — otherwise they avoid feared words and use hesitant speech. Of course, this interpretation is tentative and needs further empirical support in the future.

There were smaller effects for social rejection beliefs than for listener perception beliefs. NFS-adults and FS-adolescents did not expect any differences between the four dysfluent ways of speaking at all, whereas FS-adults associated prolonged speech with less rejection than the other three ways of speaking. It can be concluded that many PWS do expect social rejection because of stuttering (see descriptive statistics in Table 3), but that there are no clear differences in these anticipations between different dysfluent ways of speaking.

Causal attribution beliefs – with the exception of prolonged speech, seen above – were not directly associated with listener perception beliefs. PWS seem to be unsure whether it is more desirable to be perceived as a “stutterer” or as someone who is dysfluent for situational reasons. Perhaps, however, we should not expect a linear relationship here. PWS may prefer to be seen as a “mild stutterer”, that is, a “stutterer” whose stuttering does not prevent him or her from communicating properly.

### Limitations

There are limitations to this study. First, one may call into question whether the four dysfluent ways of speaking were really “comparable”. Like in listener perception studies (e.g., Susca & Healey, 2002), the presented audio/video clips differed in length. For example, the clip containing hesitant speech is markedly longer and includes longer fluency breaks than the other four clips (see Table 2). Because there are no common severity definitions for prolonged speech or hesitant speech, the creation of the speech samples had to be grounded on the clinical experience of both the speech-language clinician acting as Marcus and the authors. According to this experience, a person who stutters severely will – at least in most cases – need more time using fillers and pauses to avoid stuttered speech than using stuttered speech. That is, the longer fluency breaks incorporated into hesitant speech can be thought of as an integral part of the hesitant speech strategy. The present study was a first attempt to compare prototypical samples of ways of speaking that were intended to be similar in severity, however, future studies should explore each way of speaking in different severities.

Second, the present study examined how PWS expect listeners to react to dysfluent speech when meeting the dysfluent person for the first time. Findings may not be the same with other social situations. Third, the video clips showed an everyday conversation between a PWS and two listeners, making it impossible to keep listener reactions completely constant. It seems unlikely, however, that small differences in these reactions (e.g., smiling a little bit more or less) biased the results. In addition, the conversation setting had an important advantage. Participants watched an everyday situation and could put themselves in the position of a speaker taking high communicative responsibility (e.g., explaining his computer problem, expressing his thanks, asking someone to hold his glass). Thus, it should have been easy for the participants to realize inappropriate communication behavior. Fourth, most participants with fluency shaping history were clients of the Kassel Stuttering Therapy program, an adaptation of Webster's (1974) fluency shaping program. Therefore it is not appropriate to generalize the findings to all persons who learned prolonged speech in therapy. In particular, it should be expected that clients of "integrative" treatment approaches (e.g., Guitar, 2006; Kully, Langevin, & Lomheim, 2007) may respond differently. Fifth, the clinician acting as Marcus was known to most FS-adults but only to a few NFS-adults. A confounding effect on the findings of this study is possible but rather unlikely, given its balanced repeated measures design.

### Implications

Although most of the presented findings are based on post hoc analyses and need further clarification in future studies, they do have implications for clinicians and PWS. On a general level, they tell us that PWS are aware of the fact that, as listener perception and stereotype studies have demonstrated, they are likely to be socially rejected and to be perceived as emotionally incompetent, communicatively incompetent and unintelligent when stuttering. Furthermore, they suggest that these quite realistic beliefs can lead PWS to use avoidance strategies, although they know that avoidance can make them look more incompetent than stuttering. This study shows us that PWS are aware of these social dynamics of stuttering in an implicit way; clinicians should help them to make this knowledge explicit, that is, to make use of it in their everyday coping with stuttering. Clinicians should give their attention to the client's social anxiety, explore listener perception beliefs carefully and, if necessary, correct them in the light of scientific research. In the course of this, clients learn to answer the difficult but important question, "What do I gain or lose using this way of speaking?", to select an adequate way of speaking in a

given situation, and to influence listener perceptions verbally or non-verbally.

This is particularly important in the case of prolonged speech. Although prolonged speech is currently an important tool in stuttering treatment, there is some controversy in its application. Some clinicians argue that clients should use prolonged speech all the time and without exception, whereas others believe that prolonged speech should be used as one flexible tool among others, like stuttered speech, spontaneous fluency and stuttering modification. If prolonged speech is used in an exclusive way, several theorists (e.g., Guitar, 2006; Manning, 2001; Starkweather & Givens-Ackerman, 1997; Yaruss, Pelczarski, & Quesal, 2010) argue that it is likely to become just another avoidance strategy and will not be effective in the long run. The present study which explored the perceptions of PWS who were trained to use prolonged speech all the time supports this view. These PWS still avoid feared words at least some of the time (see Table 1; see also Cream et al., 2003). They seem to value prolonged speech because they believe that it helps them to hide their stuttering and to be perceived more positively. Unfortunately, these expectations do not seem to correspond to reality. Listeners perceive prolonged speech as negatively and as much as a chronic communication disorder as stuttered speech (Von Tiling, 2011). Therefore, this study should encourage fluency shaping therapists to explain the benefits of prolonged speech to their clients more thoroughly. They should spend more time and effort explaining that prolonged speech should be used not as a tool for hiding stuttering, but as a tool for making communication easier. They should show clients that verbal and nonverbal behaviors evoking listeners' disorder attributions often lead to better – not worse, as some PWS seem to expect – listener perceptions. They should help clients to form realistic expectations of the social acceptance of prolonged speech, preventing disappointments which may lead to relapse.

This study is not the only one pointing to disadvantages of pure fluency shaping treatment. Menzies et al. (2008) compared fluency shaping therapy with a combination of fluency shaping and cognitive-behavioral therapy. Although there were no differences in fluency after therapy, only the combined approach resulted in a reduction of anxiety and avoidance. There are, however, more elaborate cognitive-behavioral treatment programs available focusing not only on negative attitudes and self-talk, but also on shame, self-esteem and other social-emotional aspects of stuttering (Starkweather & Givens-Ackerman, 1997). These may lead to even better results than the one used in the

study by Menzies et al. Although cognitive-behavioral therapy is regarded as one of the most successful forms of psychotherapy for decades, speech-language pathologists are only beginning to realize its potential for stuttering treatment. The analysis of listener perceptions and listener perception beliefs should be one cornerstone of future cognitive-behavioral programs of stuttering.

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Received date: July 17, 2011

Accepted date: February 28, 2012

APPENDIX

*The survey used to measure listener perception beliefs, social rejection beliefs and causal attribution beliefs (translated from German).*

[Participants are watching the first video clip.]

Now try to put yourself in Marcus's position. Imagine you would have been in this situation and would have spoken like Marcus did. How would you feel perceived by Kai who has just met you for the first time?

I would expect that Kai thinks I am...

	very much	much	a bit	neutral	a bit	much	very much	
afraid	1	2	3	4	5	6	7	confident
unpleasant	1	2	3	4	5	6	7	pleasant
incompetent	1	2	3	4	5	6	7	competent
dull	1	2	3	4	5	6	7	intelligent
anxious	1	2	3	4	5	6	7	composed
communicatively incompetent	1	2	3	4	5	6	7	communicatively competent
unfriendly	1	2	3	4	5	6	7	friendly
dishonest	1	2	3	4	5	6	7	honest
like someone who often causes misunderstandings	1	2	3	4	5	6	7	like someone who rarely causes misunderstandings

I would expect that Kai thinks I have...

a chronic speaking disorder	1	2	3	4	5	6	7	problems with speaking only in this special situation (e.g., because of nervousness)
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How will my relationship with Kai probably develop in the future?

	strongly disagree	disagree	neutral	agree	strongly agree
Because of my peculiar communication behavior, Kai probably would not like to make friends with me.	1	2	3	4	5
Because of my peculiar communication behavior, Kai probably would not introduce me to his friends or invite me to a party.	1	2	3	4	5

In the following, you can make additional comments in your own words.

Now please watch the second video clip...

[Second video clip and so on.]