The Impact of Listeners' Facial Expressions on the Perceptions of Speakers Who Stutter

Influence des expressions faciales des auditeurs sur la perception des locuteurs qui bégaient

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Abstract

This two-phase study examined the impact of listeners' facial expressions on the perceptions of both persons who stutter (PWS) and fluent speakers. In Phase 1, ten individuals were videotaped while they listened to and judged the speech of a PWS. Two individuals who were rated with the opposite and extreme nonverbal facial reactions to the PWS's speech were selected to be "listeners" in the second phase. In Phase 2, the videotaped expressions of the two "listeners" in Phase 1 were used to prompt reactions from groups of PWS and controls as they recited a written, emotionally neutral monologue. The facial expressions of the two "listeners" were judged by the PWS and control speakers using a semantic differential scale containing 44 polarized adjective pairs which represent personality characteristics. Phase 2 PWS and control speakers completed an Erickson Modified Communication Attitude Scale. Their ratings were examined to determine the relationship between speakers' self-ratings of communication attitude and how favourably the two groups of speakers perceived their videotaped listening partners. Findings suggest that the listener's facial expression rated as negative was perceived less favourably than the listener's facial expression rated as positive. These findings suggest the need for a treatment model that deals with the impact of negative nonverbal communication and the perceptions of persons who stutter.

Abrégé

Cette étude en deux phases a porté sur l'influence des expressions faciales des auditeurs au niveau de la perception tant des locuteurs fluides que de locuteurs qui bégaient. Au cours de la phase 1, on a filmé dix personnes en train d'écouter et de juger le discours d'un locuteur bègue. Deux individus ayant eu une réaction faciale non verbale opposée et extrême au discours ont été choisis comme auditeurs pour l'étape suivante. À la phase 2, on a utilisé les expressions filmées des deux auditeurs pour obtenir la réaction d'un groupe de bègues et du groupe témoin tandis qu'ils lisaient un monologue neutre sur le plan émotif. Les expressions faciales des deux auditeurs ont ainsi été jugées par les bègues et le groupe témoin à l'aide d'une échelle sémantique différentielle contenant 44 paires d'adjectifs polarisés qui représentent des caractéristiques de personnalité. Les locuteurs bègues et le groupe témoin de la phase 2 ont ensuite subi un test Erickson modifié des attitudes de communication [trad.]. Leurs réponses ont été étudiées pour établir le lien entre l'auto-évaluation que font les locuteurs de leur attitude de communication et la façon dont les deux groupes de locuteurs ont perçu leurs homologues auditeurs qui avaient été filmés. Les résultats indiquent que l'expression faciale jugée négative des auditeurs était perçue moins favorablement que l'expression faciale jugée positive des mêmes auditeurs. Ces conclusions laissent entendre le besoin d'un modèle de traitement qui tienne compte de l'influence de la communication non verbale négative et des perceptions des personnes qui bégaient.

Key words: perceptual judgment, facial expression, listener perceptions, stuttering

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Most young people who stutter (PWS) quickly learn that there are social penalties for the way they speak: teachers avoid asking them questions, store clerks hurry them, strangers stare at them in sympathy, and the entertainment media has capitalized on their behaviour (Bloodstein, 1993). Bloodstein notes that many PWS become so sensitized by their struggle behaviour that they imagine all listeners react unfavourably to their speech. This sensitivity may lead to concern about how others assess them, resulting in the development of avoidance behaviours designed to protect the stutterer from social penalties (Bloodstein, 1993; Conture, 1990). Interpersonal relationships are central to humans and avoidance behaviours can have a significant negative impact on a person's life (Richmond, McCroskey, & Payne, 1991).

Hulit (1989) required graduate students to simulate stuttering in an attempt to give them an appreciation of the experience of communicative failure. The students' descriptions of listener reactions were largely negative and included such reactions as "rude," "annoyed," and "condescending." They also reported that some listeners responded in more favourable ways. Perhaps it is both the negative and positive reactions of listeners (rather than the negative alone) that play a crucial role in the degree of comfort of PWS in speaking situations.

Woods and Williams (1976) investigated perceptions of PWS and fluent participants using a bipolar semantic differential test instrument. Their findings indicated an overall negative stereotype of PWS in comparison to their fluent participants. In fact, speech-language pathologists are not immune to negative stereotyping of PWS (Kalinowski, Armson, Stuart, & Lerman, 1993; Woods & Williams, 1976). By contrast, Kalinowski, Lerman, and Watt (1987) found self-descriptions among PWS to be similar to those of nonstutterers. However, personality traits of PWS continue to be perceived as stereotypically negative. A possible reason for this stereotype is the aberrant nature of the overt struggling of stuttering (Bloodstein, 1987; Conture, 1990; Kalinowski et al.,1993; Nisbett & Ross, 1980). Judgements regarding PWS may involve subjective evaluations of behaviour rather than objective measures of character. Given the wide range of listeners' reactions to simulated stuttering (Hulit, 1989), is it possible that PWS form negative impressions of their listeners? Feyereisen and de Lannoy (1991) maintained that a crucial feature of conversation is the active participation of both partners, most probably relying on nonverbal (particularly facial) signals to indicate receptivity. It is possible that a listener who notes a lack of eye contact from a PWS may infer that the person is tense, anxious, or nervous. Conversely, a PWS who observes a listener avoiding their gaze may imagine that person to be uncomfortable, impatient, or disgusted. Holder and Kirkpatrick (1991) stressed that it is essential to understand facial expressions in order to comprehend the intent of others.

Despite the significant effect a listener may have on a PWS, there is a paucity of research examining the impact that a listener's facial expressions may have on speakers who stutter. The goal of the present study was to explore this issue by determining whether (a) there is a statistically significant difference between PWS and nonstutterers' perceptions of a listener's facial expressions, as measured on a semantic differential scale, (b) PWS and nonstutterers feel differently about themselves in response to a listener's facial expressions (as measured by the "feeling score"), (c) within-subject differences on the semantic differential scale and feeling scores vary according to the listener (i.e., in response to a positive listener versus a negative listener), and (d) there is a significant relationship between participants' self-ratings of communication attitude and their responses on the semantic differential and feeling scales. The study addressed the current implications of the negative perceptions of potential listeners' facial expressions and of a speaker's feelings toward him- or herself, especially as the perceptions might impact approaches to fluency treatment plans.

Method

Phase 1

Phase 1, The "pre-experimental" phase of the study, was conducted in order to obtain the videotaped facial expressions of two exemplar participants. The samples were then presented as "listeners" in the experimental procedure of Phase 2.

Participants

Nonstuttering male students (n =10, age range 19 - 24, M = 21.4) who were native English speakers were recruited from the general University of Western Ontario population. Students who were in speech-language pathology or audiology were excluded as volunteers in order to ensure a participant pool unfamiliar with disfluency. The study was defined to participants simply as an experiment in stuttering research, designed to assess the honest impressions and perceptions of persons who stutter. Special care was taken not to give cues that the participants' facial expressions were of primary concern and focus. The 10 participants were debriefed fol-

lowing the videotaping and before the two exemplars were selected for phase two.

Tape Construction

A "baseball script" monologue previously videotaped by a white male PWS, aged 55-60 was presented on a TV monitor. The monologue was recorded onto a Super-8 videotape using a camcorder (Sony Video 8 Pro Digital Stereo, Precision C.C.C.) , and was subsequently transferred and copied to VHS ½" videotape. A high quality 14" colour monitor (Samsung) with internal video recorder was used for the participants' viewing of the monologue. The fluency measure of the baseball script was defined as moderate to severe (i.e., no more than 26% repetitions, broken words, tense pauses, and prolongations). The monologue was delivered at the rate of 82 words per minute. The speaker exhibited secondary behaviours associated with his disfluencies, including facial grimaces, eye blinking, and jerking of the head. The speaker was recorded from the chest up, in a sitting position, angled to give the viewer the effect of being directly addressed. The tape totalled 3½ minutes in length.

Test Instruments

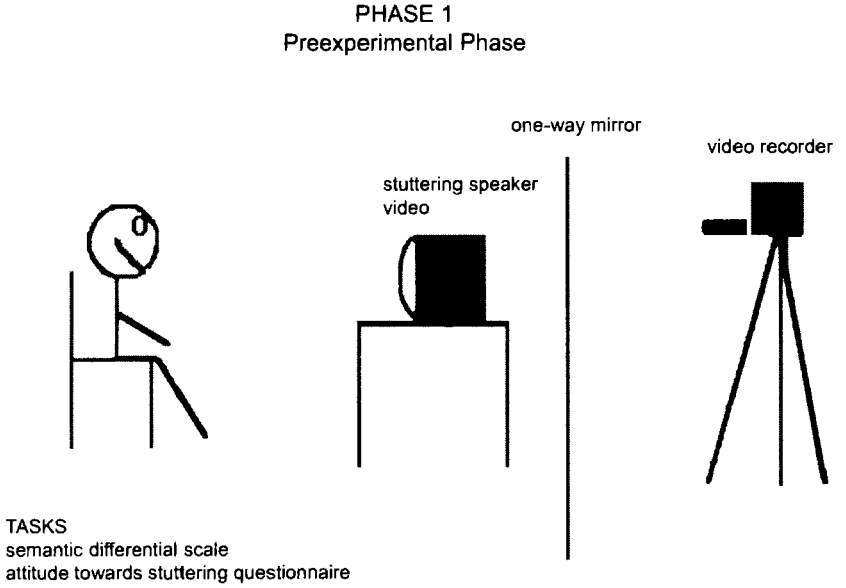
One instrument employed to evaluate stuttering stereotypes was a modified version of the 81-item "semantic differential" scale developed by Osgood, Suci, and Tannenbaum (1957). Sixty-five items were presented in a booklet, each of which contained a polarized adjective pair describing personality characteristics such as"friendly/unfriendly" and "relaxed/tense." The 65 word pairs were presented along with a 7-point equal interval scale, with the polarity randomly assigned to the left or right anchors to avoid the possibility of a predetermined set response. Participants were instructed to circle the number that they felt best described the speaker. For example, a '4' indicated a neutral response, a '1' or '7' suggested strong agreement with the adjective closest to that rating, a '2' or '6' suggested a moderate agreement, and a '3' or '5' suggested a slight agreement to the adjective on the appropriate pole. The experimenter recoded the values circled by the participants giving extreme positive traits a score of one and extreme negative traits a value of seven (Atkins, 1988).

A modified version of "The Normal Speaker's Attitude" (Welch, 1994) also was completed by each participant. The scale consists of a 17-item questionnaire designed to elicit attitudes and stereotypes towards PWS. The questionnaire served as qualitative data to confirm the overall classification of participants' responses as either positive or negative on the semantic differential.

Procedure

Participants in Phase 1 were taken individually to the designated laboratory room that contained one mirrored wall designed to conceal an observation room and a video camera situated on the opposite side of the

Figure 1
Method of videotaping of facial expression to obtain positive and negative exemplars.



mirror. Each participant was provided with a letter of information to be read prior to viewing the stuttering speaker's monologue on videotape. The semantic differential scale and questionnaire were then distributed along with instructions for their completion. Participants were informed that the experimenter would not be in the room but could be called upon for assistance during any part of the procedure. As each participant read the letter of information, the experimenter momentarily entered the adjoining room and began videotaping the participant through the one-way mirror. Participants' facial expressions were recorded while they watched the videotaped monologue of the stuttering speaker (see Figure 1). The experimenter then waited outside while each participant completed the response sheets. After the experimenter collected these, the participants were presented with the "Debriefing Letter - Phase 1" which informed participants of the fact that they had been videotaped during the presentation of the stuttering speaker's monologue and of the real purpose of the study. Participants were given the opportunity to ask questions and, once these had been answered to their satisfaction, were presented with a consent form. Participants were instructed to sign only if they agreed to allow their videotape to be selected as one of the two possible exemplar tapes to be used in Phase 2 of the study. After obtaining the participants' consent, the mean score for the 65-item semantic differential scale was calculated individually (values were rounded to the nearest whole number).

The lowest mean value was found to be two, while the highest mean value was five. These were chosen as the positive and negative exemplars, respectively. Positive and negative attitudes towards PWS were reflected in the questionnaire's qualitative analysis of each exemplar as well as in the quantitative analysis. For example, in response to the question "How did you feel when the stutterer you viewed was having a great deal of difficulty?" the negative exemplar responded "moderately uncomfortable," while the positive exemplar replied "not uncomfortable at all."

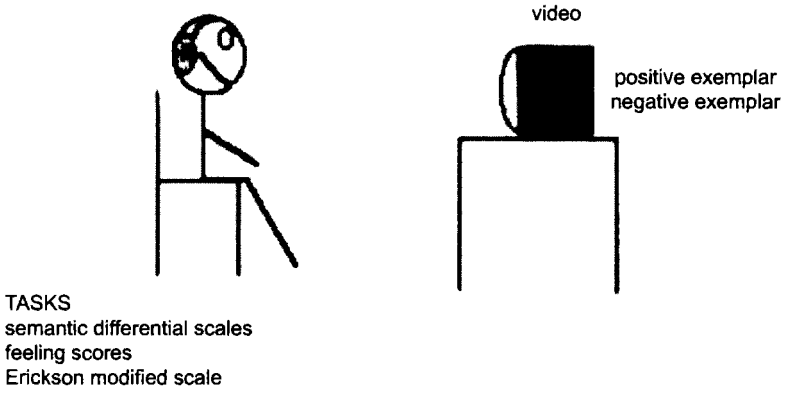
Phase 2

The experimental phase of the study was conducted to assess how the facial expressions of potential listeners are perceived by groups of stuttering and nonstuttering speakers, with the aim of determining how such nonverbal reactions may impact a speaker's self-perception. Both stuttering and nonstuttering participants' ratings of their own communication attitudes, as well as their perceptions of listeners and personal responses to these perceptions were examined.

Participants

Twenty participants participated in Phase 2. There were 10 stuttering participants recruited from the UWO

Figure 2
Schematic of participant viewing exemplars' facial expressions in response to audio taped baseball speech.



clinic (*M* age 30.0 years, age range 14-59 years, *SD* =17.70) and 10 nonstuttering control participants recruited from the general university population (*M* age 30.2 years, age range 12-55 years, *SD*= 17.72). The two groups were matched with respect to age and sex (7 males and 3 females in each group). All participants were Caucasian and spoke English as their primary language.

Test Instruments

The semantic differential scale described in Phase 1 was revised in order to eliminate inappropriate items (e.g., speaks poorly / speaks well) from use in this phase of the study. The revision was carried out by instructing two graduate students in Speech–Language Pathology to independently select items that did not deal with behaviour consistent with the exemplars as listeners. Items that were selected by both "judges" were eliminated resulting in the 44-item scale. Instructions given to participants for completing this new 44-item semantic differential scale and the procedure for recoding the results were carried out as described in Phase 1. Upon completion of the scale a "feeling score" was obtained from each participant by asking the question, "Overall, how did this listener's facial expressions make you feel about yourself?" Two response choices were presented: "bad about myself" (negative), or "good about myself" (positive). A score of zero was assigned to a negative response while a positive response received a value of 1. Therefore, the higher the mean score for a category indicated more respondents felt this particular way.

Nine relevant items from the Erickson Modified 24 Scale (Erickson, in Andrews & Cutler, 1974) were used as a measure of communication attitude. Items selected were relevant to the study and avoided items of a general nature (e.g., I am a good mixer). These true or false items were presented to participants following completion of the semantic differential. True and false ratings were recoded following completion of the response sheet, with a score of zero given to each false response and a score of 1 to each true response. The lower the sum of scores, the poorer the communication attitude.

Procedure

The procedure for Phase 2 was outlined in the "Letter of Information - Phase 2" given to each participant. Having given written consent, each participant was audio-taped individually while reading the "baseball script" monologue in a quiet, nondistracting setting. This audio tape was then rewound and played back to each participant along with one of the two exemplars' videotapes of facial expressions selected in Phase 1 (see Figure 2). Participants were asked to "pretend" that the facial expressions they were about to see on the videotape were in response to their own audio-taped performance of the baseball script. The exemplars' videotapes were presented (both positive and negative) in alternating order within each test group. That is, five of the ten PWS and their matched nonstutterers were shown the "positive" exemplar first, while the remaining PWS and their matched controls were presented with the "negative" exemplar first. The experimenter remained in the room during this procedure to operate audio and video equipment. Participants were instructed to watch the exemplar video in its entirety, even if their own audio taped recording ended prematurely. The experimenter remained in the room during this time to answer any questions regarding the semantic differential scale. After completion of the second semantic differential scale, participants rated their communication attitude on the "Erickson Modified Scale." Finally, the purpose of the study was revisited briefly with each participant to elicit comments from them about their perception of the exemplars.

Results

A 2 x 2 (group x exemplar) split plot Analysis of Variance (ANOVA) calculated on the perceptions of

Table 1
Mean *(SD)* raw scores of dependent variables for PWS and nonstutterers

		Semantic Differential				Feeling Score			
		Positive Exemplar		Negative Exemplar		Positive Exemplar		Negative Exemplar	
Group	**N**	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Nonstutterers	10	3.26	.68	4.24	.69	.80	.42	.30	.48
PWS	10	3.50	.98	4.08	.80	.90	.32	.60	.52
All participants	20	3.38	.83	4.16	.73	.85	.37	.45	.51

listeners revealed no significant main effects or interaction. However, significant within-participants' difference was found for semantic differential scores in response to listeners' facial expression. That is, all participants in Phase 2 rated the negative listener's expression as less favourable ($F(1,18) = 7.47$, $p < .05$; see Table 1). A similar between-group finding for facial expression and feelings toward self was found. All participants felt significantly more positive toward themselves ($F(1,18) = 5.43$, $p < .05$) after viewing the positive listener than after viewing the facial expressions from the person who represented the negative exemplar. Mean raw scores derived from the Erickson Modified Scale showed that PWS reported relatively negative attitudes towards their own communication ($M = 5.0$, $SD = 1.41$) in comparison to nonstutterers ($M = 6.4$, $SD = 1.41$). The differences however, were not significant.

Discussion

The present study explored the impact that a "simulated" listener's facial expressions might have on speakers who stutter and whether this impact differs from that of nonstutterers. Our results suggest that PWS did not show a greater tendency to assign negative attributes to these simulated listeners than did nonstutterers. Rather, significant differences between positive and negative listeners' facial expressions were noted for both nonstutterers and PWS, supporting the notion that PWS can perceive a difference between the two expressions. These results suggest that PWS perceive negative nonverbal behaviour as accurately as do nonstutterers. This finding is in contrast to Bloodstein's (1993) contention that PWS may imagine that all listeners react negatively to their speech.

Further, the results indicate that PWS do not tend to feel differently about themselves in response to listeners' facial expressions any more than do nonstutterers. Both PWS (9/10) and nonstutterers (8/10) felt relatively good about themselves in response to the positive listeners' facial expressions, and relatively bad about themselves in response to the negative listener (Table 1). It must be noted that the study involved a simulation and participants were asked to imagine themselves in a situation with the exemplars being listeners. The validity of the findings may be questioned because of the simulation. However, it is argued that the "exemplars" facial expressions were video taped without their knowledge during the time they were making a judgement of a PWS and therefore reflect valid expressions. Using a "live" listener would be the ideal methodology but would present uncontrollable methodological problems. Certainly more research in this area is needed, especially with a larger number of participants.

An important implication of our findings however, is that perceptions of nonverbal communication may have an effect on people including PWS. As a result, the present study supports the argument for addressing such issues in the treatment of PWS — the impact of nonverbal communication should be considered as an integral component of a comprehensive fluency treatment model. Support for such a need comes from Sheehan and Martyn (as cited in Berkowitz, Cook, & Haughey, 1994), who reported that "those who had incorporated stuttering into the self-concept were more likely to have remained stutterers, while those who had not incorporated stuttering into the self-concept were more likely to have recovered...Whether stuttering persists is largely a function of how the stutterer views himself and how he feels about himself in relation to others" (p. 99).

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APPENDIX

Baseball Script

Baseball is the great American pastime, It started out as a reaction to the industrialized age occurring in the New England states. Industry had been built up and had become so rigorous and time constraining. Everything was done on time and to precise specifications. Workers were being driven to work more quickly and more efficiently. Shift work began and shifts were being used two and possibly three times per day. Baseball resulted as a corporate response. What I mean is that management felt that by having a recreation program like baseball they would create companionship and competition between the two shifts on the field and this would increase productivity in the factory.

The two shifts, usually a day and a night shift, made up the teams. It was a way for the families to get out together, have fun and talk. Many would spend time watching their boyfriend or family member. You may notice that there are no clocks, therefore, no time constraints, which was yet another example of baseball's industrial beginnings. Everything centred around clocks, in the factory - the time clocks, town centres, on peoples' wrists, in the home. But in baseball, clocks were never present. Because you're bound by time in every other thing in life, baseball was freedom from time,. So on Sunday afternoon at the ball park there is no time; time is meaningless.

The players uniforms in the beginning had a tie to the shift the players worked. The uniforms had two colours: gray and white. Gray was for the away team, which was the shift that was coming out of the factory and therefore were dirty from work, while the white uniforms were for the workers just going into work at the factory and therefore they were still clean.