Origins of the stuttering stereotype: Stereotype formation through anchoring–adjustment[☆]

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Received 21 November 2006; received in revised form 19 March 2007; accepted 24 March 2007

Abstract

The stereotype of people who stutter is predominantly negative, holding that stutterers are excessively nervous, anxious, and reserved. The anchoring–adjustment hypothesis suggests that the stereotype of stuttering arises from a process of first anchoring the stereotype in personal feelings during times of normal speech disfluency, and then adjusting based on a rapid heuristic judgment. The current research sought to test this hypothesis, elaborating on previous research by [White, P. A., & Collins, S. R. (1984). Stereotype formation by inference: A possible explanation for the "stutterer" stereotype. *Journal of Speech and Hearing Research*, *27*, 567–570]. Participants provided ratings of a hypothetical typical person who stutters, a person suffering from normal speech disfluency and a typical male on a 25-item semantic differential scale. Results showed a stereotype of people who stutter similar to that found in previous research. The pattern of results is consistent with the anchoring–adjustment hypothesis. Ratings of a male stutterer are very similar to a male experiencing temporary disfluency, both of which differ from ratings of a typical male. As expected, ratings of a stutterer show a small but statistically significant adjustment on several traits that makes the stereotype of stutterers less negative and less emotionally extreme than the temporarily disfluent male. Based on the results of this research, it appears that stereotype formation is a result of generalization and adjustment from personal experience during normal speech disfluency.

Educational objectives: The reader will be able to: (1) explain how the negative stereotype of people who stutter arises; (2) discuss the negative implications of stereotypes in the lives of people who

stutter; and (3) summarize why the stereotype of people who stutter is so consistent and resistant to change.

Previous research has indicated that personality traits assigned to people who stutter are predominately negative, including traits such as shy, insecure, reticent, guarded, avoidant, introverted, quiet, hesitant, self-derogatory, nervous, tense, and afraid (Doody, Kalinowski, Armson, & Stuart, 1993; Klassen, 2002; Lass et al., 1992, 1994; White & Collins, 1984). These negative personality traits constitute a stuttering stereotype that has been shown in a variety of groups, including teachers and other school staff (Crowe & Walton, 1981; Dorsey & Guenther, 2000; Lass et al., 1992, 1994; Silverman & Marik, 1993; Yeakle & Cooper, 1986), residents of small communities (Doody et al., 1993), and parents (Crowe & Cooper, 1977; Fowlie & Cooper, 1978). Even speech-language pathologists and clinicians have been shown to endorse the stuttering stereotype (Cooper & Cooper, 1996; Kalinowski, Armson, Stuart, & Lerman, 1993; Lass, Ruscello, Pannbacker, Schmitt, & Everly-Myers, 1989; Silverman, 1982), though one study shows that stereotypical thinking appears to have lessened among speech-language therapists in the UK since 1985 (Crichton-Smith, Wright, & Stackhouse, 2003). The negative personality traits attributed to stutterers may not be accurate (Bloodstein, 1995), yet they are prevalent and consistent, creating elements of a social reality that people who stutter will encounter in their everyday lives.

Research on stereotypes has shown that negative stereotypes of minority groups can impact their employment income (Stroh, Brett, & Reilly, 1992), increase their self-consciousness and worry when alone in an majority group (Cohen & Swim, 1995), and cause them to withdraw from activities in which society expects them to fail (Steele, 1992). Gabel, Blood, Tellis, and Althouse (2004) conducted a survey of 385 university students and found that people rated stuttering as having an overall negative effect on career opportunities. Moreover, Gabel et al. (2004) report that many careers that require frequent oral communication (e.g., attorney, judge, guidance counselor, etc.) were viewed as inappropriate choices for people who stutter. In a recent survey by Klein and Hood (2004), one in five people who stutter said they were turned down for a job because of their stuttering.

The presence of negative stereotypes has the potential to lead to poorer performance on tasks. This may result from a fear of confirming others' stereotypes, even if the stereotype target and the people holding the stereotype are not in direct contact. This phenomenon, called stereotype threat (Steele & Aronson, 1995), has been shown most often with racial stereotypes, but there is no reason to believe that the effect is limited only to race. Daniels and Gabel (2004) state that "...people who stutter are perceived as limited in the kinds of careers and activities in which they can succeed. Such perceptions, which evolve when stuttering is assigned category status, may limit educational, occupational, and social experiences, and potential life roles" (p. 205). Given that processes such as stereotype threat can have an important impact on the personal and professional lives of people who stutter, there is reason to be concerned about the potential effects of negative public attitudes, especially if they are expressed as abstract representations about groups. The assumptions about persons that are activated by categorical representations or schemas are notoriously difficult to alter later on (Fiske & Neuberg, 1990).

In the case of stuttering, attempts to combat the negative stereotype would be aided by a better understanding of the source of those stereotypes. Though most of the literature demonstrates that

negative attitudes about people who stutter exist, few studies have examined *why* these stereotypes occur. We propose that this process reflects the operation of the anchoring–adjustment heuristic[1] described in the influential work of Tversky and Kahneman (1974). The current research elaborates on the notion that the stuttering stereotype is formed though inference from one's own experience with temporary disfluency (Doody et al., 1993; White & Collins, 1984).

White and Collins (1984) tested a hypothesis concerning the origin of the stuttering stereotype. Their hypothesis was that normally fluent speakers interpret the experience of stuttering speakers by referring to their own cognitive experiences when producing non-fluent speech (White & Collins, 1984, p. 567). People who are usually fluent speakers exhibit stuttering-like behavior when under stress, and in such situations, the speaker is perceived to be nervous, shy, anxious, and self-conscious.[2] Participants in the study by White and Collins (1984) were asked to rate either (1) an adult male who stutters or (2) a normally fluent adult male speaker who starts to stutter for a short time, after which he speaks fluently again. The minimum correlation obtained by comparing the two ratings was 0.77 and the maximum was 0.92, both of which support the notion that the stuttering personality stereotype might be formed by generalizing from one's own experiences when producing non-fluent speech.

A related view is offered by Doody et al. (1993) who suggested that the negative stereotypes surrounding stuttering may originate though inference as "non-stutterers make judgments about stutterers based on their own feelings when they themselves experience disfluent stuttering-like speaking moments" (p. 369). In other words, normally fluent individuals may generalize the internal feelings that accompany moments of temporary disfluency to the permanent personality traits of individuals who stutter. Temporary disfluencies often occur when a person is nervous or tense. It is possible that people generalize these feelings to individuals who stutter and assume that they generally must be nervous and tense.

The theoretical account offered by previous researchers on the formation of the stuttering stereotype (Doody et al., 1993; White & Collins, 1984) is somewhat incomplete. Missing is a description of how and why this inference process is undertaken. In our daily lives, many of us will encounter numerous strangers each week without taking the trouble to form categorical, stereo-typical inferences about them. Why then do we form stereotypes of stutterers, and why are those stereotypes so consistent among various groups of people mentioned in the opening paragraph above? We propose a theoretical refinement by drawing on relevant literature in psychology on the anchoring–adjustment heuristic and recent research on the reaction of non-stutters to persons who stutter.

1. Stereotype formation through anchoring and adjustment

There is a considerable amount of research that suggests people often make an adjustment from an existing anchor in order to reach a decision. The anchoring and adjustment heuristic is based on Tversky and Kahneman's (1974) seminal work on the use of heuristics in judgments. Later research demonstrated the anchoring and adjustment heuristic in a variety of situations, including estimating the number of victims of stroke in the United States (Morrow, 2002), decision-making

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[1] In psychological research, a heuristic is a simple and efficient "rule-of-thumb" that a person uses in order to expedite the decision-making process, especially when facing complex problems or incomplete information.

[2] Of course, the experience of trait stuttering is vastly different than the non-fluent experience of a fluent speaker. The intention of the research by White and Collins (1984) or the current research is not to imply that these groups are similar, but rather to illustrate how the stuttering stereotype is formed among persons who do not stutter.

in group environments (Rutledge, 1993), gambling estimates (Carlson, 1990), and answering general knowledge questions (Strack & Mussweiler, 1997).

Perhaps the research in the area of anchoring–adjustment most relevant to the present research is a series of studies conducted by Epley, Keysar, Bovan, & Gilovich (2004). Essentially, they suggest that people adopt another person's perspective by serially adjusting from their own perspective. They conducted a series of five studies examining how people interpret ambiguous answering machine (studies 1 and 2) and email messages (study 5), how they implicitly evaluate other people based on head nodding or shaking (study 4) as well as looking at how participants gauged the accuracy of other participants on a cola taste test (study 3). These studies revealed four important points about perspective taking: (1) participants are slow to rate others' perspectives as different than their own; (2) egocentric biases increase under time pressure; (3) biases decrease when rewards are offered for accuracy; and (4) adjustments from one's own perspective tend to be insufficient, because people stop adjusting from an anchor as soon as a plausible solution is reached.

Guntupalli, Kalinowski, Nanjundeswaran, Saltuklaroglu, and Everhart (2006) suggest that the stuttering stereotype is formed through a two-step process that is initiated by the perceiver's initial, uncontrolled, negative reaction to the speech patterns of a person who stutters. Using the anchoring–adjustment heuristic to make sense of this automatic emotional reaction, the perceiver first uses his or her understanding of the experience of temporary speech disfluency as an anchor for judgments of the attributes of stutterers. Realizing that disfluency and stuttering experiences are not necessarily one-and-the-same, the perceiver then quickly makes an adjustment to partially account for the high intensity of the emotional experience during moments of disfluency. If this account holds, then we would expect that ratings of stutterers would be quite similar to ratings of a temporarily disfluent speaker, though a little less extreme, especially with respect to anxiety, nervousness, and similar emotions.

2. The current study and hypotheses

The present study tests to see if the anchoring and adjustment processes can account for stereotypical personality ratings attributed to trait stutterers. We asked persons who do not stutter to provide ratings on a set of 25 traits for three hypothetical persons: (1) a typical male, (2) a male who experiences temporary speech disfluency (state disfluent male), and (3) a male with a permanent stutter (trait stutterer). Using hypothetical persons as exemplars allows us to activate only the categories in which we are interested, without confounding them with specific, individual attributes of speakers presented on videotape or audiotape that might impact the person perception process (e.g., age and attractiveness of the speaker, tone of voice, content of speech sample, etc.). To test the anchoring–adjustment account of stereotype formation, our hypotheses are as follows.

H1. Trait stutterers will be rated as having significantly more negative personality traits than the typical male.

H2. There will be a strong correlation between ratings of the trait stutterer and state disfluent male. This represents the anchoring phase of the process.

H3. Where differences in means between state and trait ratings exist, the ratings of the state experience will be more negative than the ratings of the trait stutterer. This represents the adjustment phase of the process.

3. Method

3.1. Participants

Participants (N=183) included students from first, second, and third year psychology classes at University X. Almost two-thirds of the sample was female (N = 122, 67%), 31% were male (N = 56) and 3% did not state their sex (N = 5). The mean age was 20.9 years (S.D. = 4.85) with a range of 18–50 years of age. Approximately 87% of participants were Caucasian (N = 159), 1% were of African descent (N = 2), 1% were Aboriginal (N = 2), 6% identified themselves as "other" (N = 11), and 3% did not state their ethnicity (N = 6).

3.2. Materials

Participants were first instructed to read a consent form after which participants were randomly assigned to one of two groups. The first group was given two hypothetical people to rate. One person was described as an adult male with an uncontrollable stutter (trait stutterer). The other person was described as a "...normally fluent adult male speaker who suddenly begins to stutter for a short period of time, after which he speaks fluently again" (state disfluent male). The order of presentation for the two persons was randomized. The target person was described as male because males are much more likely to stutter than females (Craig, Hancock, Tran, Craig, & Peters, 2002). A second group of participants was asked to rate only the personality of a typical adult male, with no mention at all of stuttering.

A 25-item semantic differential scale (Woods & Williams, 1976) was employed in order to determine the ratings of a state disfluent male ($\alpha = 0.91$), a trait stutterer ($\alpha = 0.90$), and the typical male ($\alpha = 0.82$). This scale utilizes Likert scales of bipolar adjectives separated by 7 points. Each point corresponds to a caption: 1 and 7 = *very much*, 2 and 6 = *quite a bit*, 3 and 5 = *slightly*, and 4 = *neutral*. Participants made ratings on each scale by circling one of the seven numbers. For example:

Nervous 1–2–3–4–5–6–7 Calm

In this case, low scores indicate a nervous personality, while high scores indicate a calm personality. Low scores will always correspond to the item on the left-hand side of the bipolar pair. The midpoint of the scale (4) indicates no preference for either adjective. In the above example, ratings less than 4.0 would indicate that the respondent rates the target person on the "nervous" side; ratings above 4.0 would indicate that a respondent rates the target person as more-or-less "calm." Given that low scores (e.g., 1) and high scores (e.g., 7) are assigned arbitrarily, it would be just as meaningful if the numbers were reversed (i.e., if nervous was assigned a score of 7 and calm was assigned a score of 1). Before computing the estimates of Cronbach's alpha reliability, and for use in Fig. 1, items were coded in the same direction so that high scores are indicative of the stuttering stereotype. In recoding, a score of 7 is converted to a score of 1, 6 becomes 2, 5 becomes 3, and so on.

The final section of the questionnaire included demographic questions regarding age, gender, ethnicity, and program of study.

3.3. Procedure

The present study was conducted during university class time. Participants were told that participation was voluntary and that they did not have to answer any questions if they so chose.
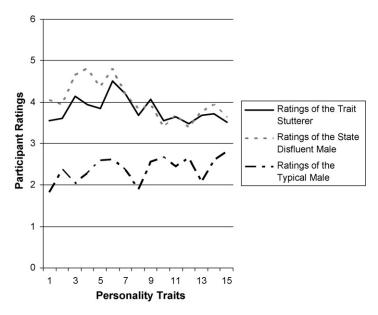
Fig. 1. Stereotypical trait ratings of trait stutterers, state disfluent males, and typical males. *Note*: The 15 stereotypic traits are plotted on the *x*-axis. For ease of interpretation, the polarity of 5 out of 15 of these stereotypical traits had to be reversed so that high numbers would be indicative of a stereotypical response. For this reason, on recoded traits, the means shown in Table 1 will not match those in the figure. The recoded traits are indicated with [r]. The traits shown in the figure are as follows: (1) afraid–confident, (2) fearful–fearless, (3) nervous–calm, (4) tense–relaxed, (5) anxious–composed, (6) self-conscious–self-assured, (7) shy–bold, (8) withdrawn–outgoing, (9) quiet–loud, (10) talkative–reticent [r], (11) avoiding–approaching, (12) aggressive–passive[r], (13) daring–hesitant[r], (14) secure–insecure[r] and (15) bragging–self-derogatory[r].

Participants were instructed to read the consent form and place a checkmark in a box if they agreed to participate. The study was introduced as a short questionnaire study, which included descriptions of two hypothetical people along with the 25-item semantic differential scale, and demographic questions. The questionnaires given to the experimental group were counterbalanced to reduce the chance of order effects. Half were asked to rate the trait stutterer first and the other half were asked to rate the state disfluent male first. The researcher briefly described the purpose of the study, gave instructions concerning the rating scales (e.g., circle one point only), and then distributed the questionnaires. Students were instructed not to collaborate or look at their neighbor's ratings during the questionnaire period. Participants were permitted to direct any questions regarding the completion of the questionnaire to the researcher. The typical male was presented to a separate group of raters both to avoid order effects and to prevent the control group from associating their ratings of the typical male with stuttering.

4. Results

The differences between the trait stutterer and the typical male were examined first to assess the nature of the stereotype of stutterers. The ratings were provided by two different groups so a multivariate independent groups *t*-test was conducted. The test was first evaluated at the multivariate level to control the overall type 1 error rate (see Tabachnik & Fidell, 1996). Pillais' Trace = 0.45, $F(25, 147) = 4.74$, $p < 0.001$, *partial* $\eta^2 = 0.447$. Before inspecting the 25 traits

individually, we lowered the alpha level from 0.05 to 0.002 based on a Bonferonni adjustment (0.05/25). Compared to the typical male, the trait stutterer is significantly ($p < 0.002$) more nervous, shy, self-conscious, tense, anxious, withdrawn, quiet, reticent, avoiding, fearful, passive, afraid, hesitant, insecure, and self-derogatory. These 15 traits therefore can be considered stereotypical of people who stutter. Participants in this sample showed no significant difference between the typical male and trait stutterers on the following 10 bipolar pairs: open–guarded, sensitive–insensitive, introverted–extroverted, emotional–bland, cooperative–uncooperative, friendly–unfriendly, pleasant–unpleasant, intelligent–dull, perfectionist–careless, and inflexible–flexible. Means and standard deviations for each of the 25-scale items are presented in Table 1.

To test the anchoring portion of the anchoring–adjustment hypothesis, we computed the correlation between the state and trait ratings. Results show significant correlation between state and trait ratings, $r(147) = 0.55$, $p < 0.001$. To further test the relationship between these two variables, we also used White and Collins' (1984) procedure, which involves correlating the mean ratings of each personality trait. White and Collins offer the following when explaining the proper use of this method:

> The variance in the means across the scales [. . .] depends upon the relative polarity of the scales. Changing nervous-calm to calm-nervous, for example, alters the variance in the means across the scales. There is no "true" or "correct" arrangement of scale polarities, but since the strength of the correlation is related to the amount of variance in the means, one can calculate minimum and maximum correlations for the data obtained by arranging scale polarities to minimize and maximize, respectively, the variance in means across them (p. 569).

Using this method, the minimum correlation between state and trait ratings in the present study is $r(23) = 0.79$, $p < 0.001$, and the maximum correlation is, $r(23) = 0.96$, $p < 0.001$. These results suggest that participants rated the state disfluent male and the trait stutterer in a highly similar fashion.

Finally, to test the adjustment portion of the anchoring–adjustment hypothesis, we compared ratings of the trait stutterer to the ratings of the state disfluent male. A multivariate paired *t*-test was conducted to locate differences in the 25 means of trait and state ratings. At the multivariate level, there was a significant difference between state and trait ratings, $F(25, 118) = 3.98$, $p < 0.001$, *partial* $\eta^2 = 0.457$. To examine this finding more closely, we inspected the univariate results. Significant differences ($p < 0.002$) were observed for seven traits. In six of those seven cases, where differences between the state and trait ratings were significant for individual items, the ratings for the state disfluent male tended to be more extreme (i.e., closer to 1 or 7 on a Likert scale) than the trait stutterer, consistent with our hypotheses (see Table 1 and Fig. 1). The only anomalous case was for pleasant–unpleasant. The polarity of this item differs from the other six items which all refer to anxiety-related traits (see Table 1). Therefore, we can summarize the results by noting that in every instance of a significant difference in means between the state disfluent male and the trait stutterer, the state disfluent male was always rated more negatively and usually thought to be more anxious.

5. Discussion

The current research builds on previous findings that the stuttering stereotype is formed through inference (Doody et al., 1993; White & Collins, 1984) by drawing on anchoring–adjustment theory. Our results indicated that participants rated a male trait stutterer more negatively than a

Table 1
Mean differences on the semantic differential scale items ($p < 0.05$)

	Likert scale item	State [mean (S.D.)]	Trait [mean (S.D.)]	Typical male [mean (S.D.)]	Compared to trait stutterer, state stutterer is more	Compared to typical male, trait stutterer is more
1	Afraid–confident	2.95 (1.29)	3.45** (1.26)	5.17## (0.89)	Afraid	Afraid
2	Fearful–fearless	3.06 (1.21)	3.39** (1.32)	4.62## (1.35)	Fearful	Fearful
3	Nervous–calm	2.34 (1.26)	2.85** (1.45)	4.96## (0.98)	Nervous	Nervous
4	Tense–relaxed	2.20 (1.14)	3.07** (1.33)	4.72## (1.19)	Tense	Tense
5	Anxious–composed	2.63 (1.36)	3.15** (1.36)	4.41## (1.18)	Anxious	Anxious
6	Self-conscious–self-assured	2.19 (1.22)	2.49 (1.41)	4.39## (1.52)		Self-Conscious
7	Shy–bold	2.83 (1.30)	2.81 (1.23)	4.65## (1.37)		Shy
8	Withdrawn–outgoing	3.18 (1.37)	3.31 (1.34)	5.10## (1.18)		Withdrawn
9	Quiet–loud	3.07 (1.27)	2.93 (1.26)	4.45## (1.38)		Quiet
10	Talkative–reticent	4.39 (1.64)	4.56 (1.36)	3.65## (1.56)		Reticent
11	Avoiding–approaching	3.32 (1.23)	3.35 (1.24)	4.55## (1.50)		Avoiding
12	Aggressive–passive	4.38 (1.21)	4.48 (1.12)	3.64## (1.35)		Passive
13	Daring–hesitant	4.77 (1.25)	4.68 (1.27)	3.07## (1.16)		Hesitant
14	Secure–insecure	4.93 (1.44)	4.71 (1.33)	3.59## (1.38)		Insecure
15	Bragging–self-derogatory	4.62 (1.06)	4.52 (1.01)	3.79## (1.59)		Self-derogatory
16	Cooperative–uncooperative	3.66 (1.32)	3.44 (1.31)	3.46 (1.32)		
17	Friendly–unfriendly	3.35 (1.31)	3.17 (1.37)	3.00 (1.44)		
18	Intelligent–dull	3.27 (1.33)	3.17 (1.38)	3.07 (1.22)		
19	Perfectionist–careless	3.71 (1.08)	3.67 (1.04)	3.93 (1.51)		
20	Inflexible–flexible	4.05 (0.95)	4.29 (0.98)	4.38 (1.47)		
21	Sensitive–insensitive	3.11 (1.19)	2.99 (1.11)	3.69 (1.47)		
22	Open–guarded	4.88 (1.44)	4.76 (1.38)	4.07 (1.33)		
23	Emotional–bland	3.48 (1.05)	3.60 (0.98)	4.2 (1.32)		
24	Introverted–extroverted	3.25 (1.13)	3.47** (0.97)	3.93 (1.10)	Introverted	
25	Pleasant–unpleasant	3.64 (1.26)	3.28** (1.34)	2.82 (1.23)	Unpleasant	

** Significant difference ($p < 0.002$) between state stutterers and trait stutterers.
Significant difference ($p < 0.002$) between state stutterers and the typical male.

typical male, replicating the negative stereotype toward those who stutter observed in other studies (Doody et al., 1993; Klassen, 2002; Lass et al., 1992, 1994; White & Collins, 1984).

Participants appear to have anchored their judgments of people who stutter in their knowledge about experiencing state disfluency. The ratings of male stutterers were highly correlated with (from 0.79 to 0.96) ratings of males experiencing temporary speech disfluency, results that are virtually identical to White and Collins' (1984) findings. The strength of this relationship lends credence to the idea that the stereotype surrounding persons who stutter results from first anchoring in prior feelings during state disfluency.

Though the relationship between state and trait ratings was strong, there were still significant differences between state and trait ratings on seven of the bipolar pairs. We suggest that this represents the operation of an adjustment phase, where raters made some changes to their anchor (in this case, feelings during state disfluency) when making a rating of people who stutter. The direction of the adjustment is consistent. In all cases, the ratings of the state disfluent male were more negative than ratings given to the trait stutterer. Specifically, the state disfluent male was seen as more afraid, fearful, nervous, tense, anxious, introverted, and unpleasant. Participants seem to be inferring that trait stutterers have adapted to the stuttering experience, but typically fluent speakers, being accustomed to fluency, react to a greater degree when experiencing disfluency (see Fig. 1). However, participants also appear to be underestimating the degree of difference between a person experiencing temporary state disfluency and a person who has a permanent, uncontrollable stutter.

There is not a strong reason to believe that the personality of a stutterer systematically differs from a typical person, and this is supported by research (Bloodstein, 1995). Therefore, one would expect that a person would use the typical male as a benchmark (i.e., anchor) and adjust their perception of a person with stuttering from there. However, given the results of this study, it seems that people actually use their feelings during temporary state disfluency as an anchor, and adjust from that experience when making a personality judgment about a person with stuttering. People will stop making adjustments before considering all the possible reasons for stuttering (Epley et al., 2004). The effect of stopping too soon is to leave the ratings of stutterers as too similar to state disfluency and not similar enough to the typical male. Heuristics such as anchoring–adjustment often sacrifice accuracy for speedy cognitive processing (Fiske & Taylor, 1991).

6. Limitations and future research

One important limitation of this study is that the hypothetical persons used as examples in our study were all male. Thus, we cannot determine with this data if male and female stutterers are viewed differently by non-stutterers. Another possible limitation is that the study was conducted with a fairly homogeneous sample and might not generalize beyond university students, though our results are consistent with previous research in other groups. Finally, and most significantly, it may be argued that the use of hypothetical persons may not reflect the process undertaken in stereotyping a real person.

Hypothetical persons were used to examine the process of stereotyping by using abstract categories rather than individual persons. This methodology limits the generalizability of the results. We are unsure as to whether individuals would react in the same way to a real person as they did to the written, hypothetical examples. For example, a study by Wenker, Wegner, and Hart (1996) found that when viewed on videotape, disfluent speakers were rated as more trustworthy, sincere, friendly, and having a better sense of humor when compared to a fluent speaker, a result not corroborated by the data utilizing hypothetical persons. However, using hypothetical persons

as examples has merit in that the ratings are not confounded by the perceptions of a specific individual who may be viewed as more or less attractive, friendly, boring, and so on. This allows for an examination of the stereotype as an abstract category, and has been used in numerous studies in the past (Doody et al., 1993; Dorsey & Guenther, 2000; Gabel, 2006; Lass et al., 1992, 1994; White & Collins, 1984; Woods & Williams, 1976). The use of such categories does occur in daily life. For example, impressions of persons who stutter are of particular importance in employment seeking contexts, where stereotypical preconceptions can affect the treatment of a candidate for a job. It would be interesting to conduct future research on the anchoring–adjustment process in more naturalistic settings, such as with job applicants self-identified as stutterers. To make results such as the ones from the present study more generalizable, and enhance confidence in the description of the underlying processes, they must be replicated in the "real-world" settings in which they are thought to apply.

Recent research has suggested that there may be another component involved in the creation of the stereotype of people who stutter. There is some evidence that stereotypes can be activated automatically at an unconscious level by merely perceiving the distinguishing features of the stereotyped group (Bargh, 1994; Devine, 1989; for a review, see Bargh & Chartrand, 1999). More specifically with respect to stuttering, Guntupalli et al. (2006) found that fluent adults have an automatic increase in skin conductivity upon hearing stuttered speech. This physiological measure indicates that fluent speakers become emotionally aroused when listening to the speech of a person who is stuttering, without necessarily understanding why the arousal occurs. The anchoring–adjustment process may be initially activated as an attempt to account for one's own spontaneous emotional arousal induced by listening to stuttered speech, which inadvertently results in stereotyping persons who stutter. Future research would do well to focus further on the automatic, negative evaluation that fluent speakers have toward stuttered speech in order to have a more complete model of the stereotype formation of people who stutter.

Though often an automatic process, the stereotype surrounding persons who stutter may not be inevitable. The anchoring–adjustment heuristic is used when people must make a quick decision. A heuristic, like all "rules of thumb," can be overridden by effortful cognition or by knowledge of how heuristics operate. Savitsky and Gilovich (2003) have shown that the tendency to use anchoring–adjustment can be overcome by informing participants about the heuristic, thus reducing its effect. This too, would be an interesting topic for future research. With enough knowledge and elaborative thought within targeted groups, stuttering stereotypes may also be diminished.

Acknowledgement

CONTINUING EDUCATION

Origins of the stuttering stereotype: Stereotype formation through anchoring–adjustment

QUESTIONS

1. Based on the findings of this research, the stereotype of people who stutter arises from:
   a. lack of experience with people who stutter
   b. generalization from feelings during moments of normal speech disfluency

    c. stereotypical depictions of people who stutter in the media

    d. a genuine difference in personality in people who stutter

    e. none of the above

2. According to this paper, why is the stereotype of people who stutter so consistent across populations and resistant to change?

    a. because of ingrained socialization of stereotypical values

    b. because the stereotype is accurate in describing people who stutter

    c. because people generally feel anxious during moments of normal speech disfluency, and they attribute those feelings to people who stutter

    d. lack of experience with people who stutter, given the relatively low incidence rate

    e. none of the above

3. Which of the following is potentially a negative outcome of the stuttering stereotype in the lives of people who stutter?

    a. rejection for employment in certain jobs

    b. stereotype threat

    c. avoidance of career choices based on their stuttering

    d. false self-related beliefs

    e. all of the above

4. Which automatic process is used when developing a perception of people who stutter, according to this research?

    a. person perception

    b. anchoring–adjustment heuristic

    c. fear of loss

    d. availability heuristic

    e. confirmation bias

5. By examining prior research by Guntupalli et al. (2006), one can infer that the quick, automatic evaluation process that occurs when stereotyping persons with stuttering is first initiated by:

    a. an automatic, negative physiological reaction upon hearing stuttered speech

    b. schema activation from a plethora of negative media images regarding stuttering

    c. a negative personal experience with a person who stutters

    d. none of the above

    e. all of the above

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