Stuttering: To disclose or not to disclose

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Stuttering: To disclose or not to disclose

Abstract
The present study was an examination of the relationship between and among disclosure of stuttering at three time points, social desirability bias, memory recall, and ratings of persons who stutter (PWS) on 13 personality traits. A total of 82 adults ages 18-64 participated in the present study. There were four hypotheses in the present study. First, that disclosure of stuttering would affect participants ratings of the PWS. Second, disclosure of stuttering would affect memory recall of monologue content. Third, gender differences in listener ratings would be observed. Fourth, social desirability index scores would covary with participants’ ratings of the PWS. Results indicated some support for all hypotheses, although while in some cases initial analysis were nonsignificant, post hoc tests revealed interesting findings in all domains. Implications for clinicians and future research directions are discussed.

Degree Type
Thesis

Degree Name
Master of Science in Clinical Psychology (MSCP)

Committee Chair
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Subject Categories
Psychiatry and Psychology

Comments
Library Use: LIH

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STUTTERING: TO DISCLOSE OR NOT TO DISCLOSE

A THESIS SUBMITTED
TO THE FACULTY
OF
SCHOOL OF PROFESSIONAL PSYCHOLOGY
PACIFIC UNIVERSITY
HILLSBORO, OREGON

BY
JUSTIN R. POTTS
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
OF
MASTER OF SCIENCE IN PSYCHOLOGY
JULY 26, 2013

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STUTTERING AND DISCLOSURE

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Abstract

The present study was an examination of the relationship between and among disclosure of stuttering at three time points, social desirability bias, memory recall, and ratings of persons who stutter (PWS) on 13 personality traits. A total of 82 adults ages 18-64 participated in the present study. There were four hypotheses in the present study. First, that disclosure of stuttering would affect participants ratings of the PWS. Second, disclosure of stuttering would affect memory recall of monologue content. Third, gender differences in listener ratings would be observed. Fourth, social desirability index scores would covary with participants’ ratings of the PWS. Results indicated some support for all hypotheses, although while in some cases initial analysis were nonsignificant, post hoc tests revealed interesting findings in all domains. Implications for clinicians and future research directions are discussed.

Keywords: Stuttering, disclosure, acknowledgement, social desirability index, social desirability bias, gender differences, memory
Acknowledgments

First of all, I would like to thank my thesis chair, Dr. Shawn Davis for his unbridled enthusiasm, support, and positive attitude without which this study would not have been nearly as enjoyable a process, and would have in fact never came to fruition. As a mentor and role-model his contributions to my growth, professionally and personally, have and will continue to be much appreciated.

Second, my heart-felt appreciation goes to Dr. Kerry Mandulak for her encouragement and support in this endeavor. Her generosity in providing much needed collaboration between the psychology and communication sciences and disorders departments was above and beyond what I expected and I cannot thank her enough. Without her help this project would never have succeeded. It is a breath of fresh air to work with someone who is so willing to share her expertise and time.

Third, I would like to thank my friends and colleagues in the school of professional psychology department – they know who they are. I feel like we made it through this together and without your support and love I would not have succeeded. I hope we will remain lifelong friends of a professional and personal nature.

Fourth, my love and appreciation goes out to my family who has always been there for me. Without your support and unconditional love I would never have made it this far. My love and appreciation for you goes beyond words, particularly to my Mom who has been my role model since I can remember and embodies this incredible mix of strength, integrity, love, compassion, and courage that I hope one day to possess.
Stuttering is a universal phenomenon that has occurred throughout history and across cultures. There is evidence that the ancient Egyptians recognized stuttering as long ago as 2000 BC (Brosch & Pirsig, 2001). The Bible makes reference to Moses as a stutterer; in a response to god, Moses said, “If the Israelites do not listen to me, how will Pharaoh listen to such a halting speaker as I am?” (Exodus 6:12 The New English Bible). The ancient Greek statesman and orator Demosthenes is said to have suffered from stuttering. In the late first century the Greek historian Plutarch described Demosthenes speech in his work Plutarch’s Lives (Plutarch, trans. 1994) as having “a certain weakness of voice and indistinctness of speech and shortness of breath which disturbed the sense of what he said by disjoining his sentences” (p. 15). Additionally, the Babylonian story teller Aesop is believed to have stuttered (Kehoe, 1999). It is likely that stuttering has occurred since humans began speaking and is present in all social groups and cultures (Brosch & Pirsig, 2001; Van Riper, 1982).

Stuttering Defined and Diagnosed

Definitions of stuttering have changed throughout time as theories, knowledge, and what to include in the phenomenon itself have developed. Modern holistic definitions usually include three variables, or parts, that compose the disorder: (a) dysfluency, (b) negative emotions in response to the act of speaking, (c) avoidance behaviors (American Psychiatric Association, 2000, Diagnostic and Statistical Manual of Mental Disorders, 4th ed., text revision; Tanner, Belliveau, & Seibert, 1995; Wingate, 1964). Dysfluency is involuntary disruptions in the normal fluid and rhythmic flow of speech and improperly patterned phonemes, words, and syllables in time; these take the form of sound and syllable repetitions (e.g. ba-ba-ba-ba), sound
prolongations (e.g. mmmmm), and word or sound blocks (pauses before or during a word or sound). Negative emotions often include fear, anxiety, and embarrassment that are experienced before, during, and/or after speech. Avoidance behaviors are attempts to avoid or escape negative speech experiences. These include avoidance of words or sounds, called circumlocutions; and/or avoidance of situations or persons. Visible physical behaviors such as hand slapping or foot pounding, grunts, head jerking, and facial tension and grimaces are also considered avoidance behaviors because they are an individual’s attempts at precluding or reducing dysfluency and other negative speech experiences (Tanner et al., 1995). It is important to make a distinction between developmental stuttering, which is the topic of the present study, and acquired stuttering. Both forms of stuttering have similar symptomology, however, acquired stuttering occurs after a definable brain insult, such as a stroke, traumatic brain injury, or other forms of head trauma. Developmental stuttering does not have a definite neurological insult.

The diagnosis of stuttering focuses on the dysfluency of speech and the concomitant observable and non-observable tensions within the speech producing muscles and organs of the body (i.e., vocal cords, lips, tongue). The DSM-IV-TR is the current, as of this writing, Diagnostic and Statistical Manual of Mental Disorders and is a common diagnostic tool used to diagnose stuttering in adolescence and adults. Criterion A in the DSM-IV-TR follows this emphasis on observable indicators of stuttering that follow the definition of dysfluency. In order to meet criteria A an individual must have one or more of the following: (a) sound and syllable repetitions, (b) sound prolongations, (c) interjections, (d) broken words, (e) audible or silent blocking, (f) circumlocutions, (g) words produced with an excess of physical tension, (h) monosyllabic whole-word repetitions (DSM-IV-TR). Criterion B implicitly addresses the negative emotions present in most definitions of stuttering, and possible discrimination by
stating, “The disturbance in fluency interferes with academic or occupational achievement or with social communication.” (DSM-IV-TR, p. 69). Most mental health professionals will make a referral to a speech-language pathologist for a thorough examination and diagnosis if they suspect an individual may have stuttering.

**Stuttering Theories and Etiology**

The etiology of stuttering has a long history dating back to early descriptions of stuttering. In an ancient Jewish midrash, which is a term used for homiletic stories told by Jewish sages to explain passages in the Bible, and the Jewish Talmud, it is said that Moses began stuttering as a young child due to placing a hot coal into his mouth which caused his tongue to be burned (Midrash Rabba Exodus 1:26; Babylonian Talmud, trans. 1918). Anatomical defects of the tongue or mouth being the cause of stuttering appears to be a common theory throughout history, as is evidenced by the various treatments throughout the centuries (Brosch & Pirsig, 2001). Demosthenes attempted to control his stuttering by speaking with pebbles in his mouth (Plutarch, trans. 1994). A sixth century physician named Aetius of Amida stated a cure to stuttering would be to cut the frenulum of the tongue (Lascaratos, 1996). Hippocrates speculated that stuttering was caused by dryness of the tongue and recommended surgery or chemical means as treatment (Lawrence & Barclay, 1998). As late as the nineteenth century, surgery was being performed on the tongue and mouth in order to relieve muscular spasms and increase the tongues mobility as a cure for stuttering (for a review, see Brosch & Pirsig, 2001). During the twentieth-century, stuttering was thought to primarily be a psychogenic disorder. Due to this, psychoanalytic and behavioral techniques were employed to solve internal neurotic conflicts (Johnson, 1942; Plankers & Leighton, 1999). Contemporary theories have dismissed structural
anomalies of the speech apparatus as a cause and have relegated the psychogenic factor to a supportive rather than causative variable.

Many contemporary theories have been developed but the cause of stuttering is not yet fully understood. Bloodstein and Bernstein (2008) suggest categorizing causal theories of stuttering as either distal or proximal. Distal theories attempt to explain the underlying cause of stuttering; whereas, proximal theories attempt to explain the cause of individual moments of stuttering – some theories are both distal and proximal. Many theories implicate abnormal development, or limitations of the brain’s motor and language areas – in other words abnormalities within the central nervous system (CNS). The Speech Motor Skills approach proposes that speech is a motor skill similar to any other motor skill (Van Lieshout, Hulstijn, & Peters, 2004). This view suggests that PWS may have diminished speech motor skill ability, with diminished fluency representing errors in motor control. Evidence to support this theory comes from motor learning theory. If speech is a motor skill, then with practice it should improve. Smits-Bandstra and De Nil (2007) investigated motor practice and learning differences between PWS and persons who do not stutter (PNS) on language related tasks and a non-language related task, finger tapping. Their authors found that PWS did not improve as much as PNS nor were they able to retain practiced improvements over time. The authors concluded that their results indicate PWS may have reduced motor skill learning ability in the domain of sequence skill learning and automaticity development and implicated the cortico-striato-thalamo-cortical connections (areas in the brain that control complex motor planning and action).

Similar theories implicating speech-language and motor control systems of the brain have been put forth by many others. Perkins, Kent, and Curle (1991) suggest dysfluencies arise when there is a timing problem between linguistic and paralinguistic systems of the brain that is
concomitant with time pressure on executive functions. Postma and Kolk (1993) emphasize abnormalities in speech monitoring loops that are used to detect and correct errors in speech planning and production. Karniol (1995) speculates incongruities between motor-speech plans and their action are the cause of dysfluency. Support of these theories comes from investigations of CNS differences between PWS and PDS using fMRI and PET scans. In a recent meta-analysis that included eight studies, Brown et al. (2005) found differences in many brain regions: The right frontal anterior insula, left cingulated motor area, cerebellar vermis of lobule III, supramarginal gyrus bilaterally, frontal eye fields, auditory association cortex, motor areas and motor association areas, and left globus pallidus. The authors noted the three most salient areas of interest were over-activation in the insula, absence of activation in auditory areas bilaterally, and over-activation of the vermal region of lobule III. The authors hypothesized that these three areas of over-activation and under-activation could be explained by (a) the unsuccessful initiation of a motor plan (under-activation of auditory areas) and the brains attempts at compensating for this by repeatedly initiating the motor plan and/or (b) decreased skill is associated with concomitant increase in activation and “disease conditions that result in less competence in task performance are associated with regional over-activation.” (Brown et al., 2005, p 115). The question of what causes these brain differences in PWS and PDS has not been answered. Other causal theories have included parent-child interactions, learning through response and stimulus contingencies, genetics, and other environmental reasons (for a review see, Bloodstein & Ratner, 2008; and Curlee & Siegel, 1997).

Just as definitions of stuttering have evolved over time to include more than just dysfluency, most holistic causal theories of stuttering cite many factors (e.g., family history, social context, linguistic processes, genetics, emotional/autonomic factors, and speech motor
organization) which, through a dynamic interaction, contribute, compose, and maintain stuttering; these theories are thus labeled as multifactorial. Two influential multifactorial models are the Demands and Capacities model (Adams, 1990; Starkweather & Gottwald, 1990) and the Dynamic Multifactorial model (Smith & Kelly, 1997).

The Demands and Capacities model states that “fluency breaks down when environmental and/or self-imposed demands exceed the speaker’s cognitive, linguistic, motoric and/or emotional capacities for responding.” (Adams, 1990, p. 136). In other words, stuttering results when internal and environmental demands exceed the speaker’s capacity to respond fluently. It is important to note that none of these factors need to be abnormal – meaning, a person who stutters (PWS) does not necessarily have to have diminished cognitive, linguistic, motoric, or emotional capacity; in fact a PWS may have superior capacities, however, coupled with abnormally high environmental or internal demands may produce dysfluency.

The Dynamic Multifactorial model postulates that stuttering arises from multidimensional factors that, (a) constantly interact with each other, (b) change overtime (i.e., dynamic), (c) PWS have widely differing constellations of factors each with different magnitudes, (d) a small change in one factor or interaction between factors can dramatically change speech behaviors (Smith & Kelly, 1997). The authors summarize their theory as it relates to the etiology of stuttering as follows, “The essence of our model, then, is that stuttering emerges from the complex, nonlinear interaction of many factors. No single factor can be identified as ‘the cause’ of stuttering.” (p. 209).

The two theories previously summarized are broad explanations of stuttering and attempt to capture stuttering in its entirety, and both attempt to explain the proximal and distal causes of
stuttering. They both appear to be theoretical frameworks within which to place quantifiable evidence and other theories. For this reason, both theories have been criticized for being unfalsifiable; meaning they cannot be tested using the scientific method (Packman, 2012). However, the models have been influential because they explain the current state of the literature, that many factors contribute to stuttering, and why the sometimes contradictory results of empirical attempts to find the one cause of stuttering have thus far proven to be futile.

**Stuttering Prevalence, Consequences, and Treatment**

Stuttering is not uncommon; approximately 1% of the adult population suffers from chronic stuttering (DSM-IV-TR). While the prevalence in children is much higher, up to 80% of children recover before the age of 16 (DSM-IV-TR). The diagnosis of stuttering usually occurs between the ages of 2 and 7 with peak onset at around age 5 (DSM-IV-TR). It is estimated that over 3 million people in the United States and 70 million people worldwide stutter (Buchel & Sommer, 2004; The Stuttering Foundation, 2013). Further, there is a significant gender gap with males outnumbering females 3:1 (DSM-IV-TR).

Evidence suggests that stuttering has many negative mental health and quality of life outcomes for individuals. In a recent study, Blumgart, Tran, and Craig (2010) compared 200 PWS to 200 matched controls on a battery of social anxiety self-report measures, a health status measurement, and a structured diagnostic interview for social phobia. The results indicated that PWS were significantly more anxious across all anxiety measures. Specifically, they were (a) 20 times more likely to have significantly elevated social phobia symptoms, (b) significantly more likely to meet social phobia criteria according to the DSM-IV-TR, and (c) 40% of PWS met the criteria for social phobia using a structured diagnostic interview for social phobia. It is
interesting to note that the authors found no difference in anxiety based on gender, or stuttering severity; individuals who stuttered mildly were just as likely to have elevated social anxiety as those who stuttered moderately or severely. Similar results were found by Iverach et al (2008) who reported that PWS were 6 to 7 times more likely of meeting criteria for any anxiety disorder, 16 to 34 times more likely to meet criteria of social phobia, and 6 times more likely of meeting criteria for panic disorder. Quality of life has also been found to be negatively impacted in many domains including, (a) vitality, (b) social functioning, (c) emotional functioning, and (d) mental health status (Craig, Blumgart, & Tran, 2009). Similar results were found in a study conducted in South Africa. The South African participants who were interviewed perceived their stutter had negatively impacted their self-esteem, self-image, academic performance, relationships with teachers and classmates, and felt people in general reacted negatively to their stutter (Klompas & Ross, 2004). Another study investigated employer attitudes toward stuttering. Results indicated that three-fourths of employers thought stuttering did not interfere with job performance but the majority of employers agreed that stuttering decreased employability and interfered with promotion possibilities (Hurst & Cooper, 1983). The authors postulate that stuttering may be a significant vocational handicap.

Children and adolescence also suffer from negative consequences. Children who stutter are often teased and bullied with greater reported feelings of victimization and less optimism about life (Blood & Blood, 2007; Blood et al., 2011) and experience negative peer reactions (Langevin, Packman, & Onslow, 2009). Blood and Blood (2004) also found that adolescents experience higher anxiety levels, lower self-esteem, poorer social relationships, and lower academic achievement. The research is clear: Stuttering can cause adverse consequences across the lifespan.
Treatment of stuttering is conducted primarily by speech-language pathologists. Treatments differ on what interventions are employed and on what symptoms to concentrate. Treatments that focus on reduction of dysfluency use techniques to change the timing of speech (e.g., saying words slowing, decreasing speech rate, and stretching out sounds) and/or reduce physical tension during speaking (e.g., focus on relaxation of muscles during stuttering through easy onsets into words). These treatments are sometimes called “speech restructuring” or “fluency-shaping” approaches (Blomgren, 2010). Other forms of treatments focus on reducing the fear associated with stuttering or of speaking situations (e.g., avoidance reduction interventions); these treatments are often referred to as “stuttering management” or “cognitive restructuring” approaches (Blomgren, 2010). This dichotomy between treatments that focus on reduction of fear or increasing fluency, and which is preferable, has been debated for decades (Yaruss, Coleman, & Quesal, 2012). Comprehensive approaches that include interventions for both reducing fear and increasing fluency have been reported to be the most helpful by PWS (Yaruss et al., 2002), including children (Yaruss, Pelczarski, & Quesal, 2012). The comprehensive approaches have increasingly included support groups as a way to reduce fear, and have been shown to be effective additions to traditional therapy (Yaruss et al., 2002). Given the proliferation and acceptance of multifactorial theories of stuttering, many clinicians view PWS as a heterogeneous group, and thus approach treatment in an individualized way and include aspects of both approaches dynamically. Treatment outcome has been highly researched: Over 100 studies have investigated treatment effectiveness and significant improvement occurred as a result of treatment in up to 80% of cases (Bloodstein & Ratner, 2008). However, it is important to note that the majority of these studies have defined improvement as reduction in dysfluency.
Stuttering and Disclosure

Disclosure of personal stuttering is a common intervention used to reduce fear and avoidance of stuttering and thus part of the stuttering management approach. Speech language pathologists often counsel PWS to disclosure that they stutter before giving a speech, presentation, or any interaction with another individual. There are two goals behind disclosure and both are related to each other; the first is to reduce the fear felt by the PWS during monologues or dialogues by confronting it directly; the second is to increase acceptance of the fact that the PWS does stutter. Williams (1957) was among the first authors to discuss stuttering management approaches and noted that many stutterers believe their stutter to be an “it” rather than a part of themselves. He goes on to talk about how this lack of ownership leads to a feeling of helplessness within the PWS. “As long as one functions as though an ‘it’ makes things happen, he is not motivated to observe cause and effect relationships in his behavior, for ‘it’ is both cause and effect.” (p. 391). Kehoe (1999) noted the same phenomenon:

Stutterers are both hyperaware and unaware of stuttering. Before talking to a stranger, we have a fear and anxiety that we will stutter. But when we stutter, we lose awareness of what our speech-production muscles are doing. Our minds seem to go ‘someplace else.’ We lose awareness of time. You can’t overcome stuttering until you admit that you stutter…People who stutter severely can be the least willing to talk about or do anything about their stuttering. (p. 2)

The concept that you can not change something until you accept it is a necessary component in the change process according to cognitive behavioral therapy, acceptance and commitment therapy, gestalt therapy, and mindfulness approaches; this applies to fluency disorders and other conditions (Fromme, 2011).
Self-disclosure of stuttering is part of a larger treatment to help own ones stuttering, reduce avoidance behaviors, and desensitize to the act of stuttering. In theory, the PWS regains a sense of self-efficacy and control, as well as a reduction in anxiety and tension. One aspect of self-disclosure that has not been thoroughly studied is the effect of self disclosure of stuttering on listeners of PWS. The idea behind this line of research is to give further validity to self-disclosure as a technique to reduce anxiety by showing that it changes listener perceptions of a PWS. It has been shown that listener reactions to stuttering can affect stuttering behavior (Bloodstein, 1975; Sheehan, 1975; Van Riper, 1982). Research has also shown a strong, robust, and consistent negative stereotype toward individuals who stutter (Guntupalli, Everhart, Kalinowski, Nanjundeswaran, & Saltuklaroglu, 2007; Healey, 2010; Panico & Healey, 2009; Susca, 2001). This negative stereotype has been found in many groups including speech pathologists (Rami, Kalinowski, Stuart, & Rastatter, 2003), students (Dorsey & Guenther, 2000), professors and teachers (Lass & Ruscello, 1992), and people who stutter (Kalinowski, Lerman, & Watt, 1987). Self-disclosure of stuttering may influence listener perceptions of PWS and, in turn, alter their reaction and the negative stereotype. To date, three studies have investigated disclosure and listener perceptions, and have resulted in inconsistent findings.

Blood and Collins (1990) conducted the first investigation of disclosure and listener perceptions. In this study, participants watched two short audio-visual recordings of two different PWS and completed a 7-point Likert-scale personality rating on 14 personality traits (i.e., trustworthiness, likeability, intelligence, physically normal, etc). One of the videos featured a PWS who disclosed their stutter near the end of the video and the other video featured a PWS who did not disclose their stutter. The study methodology employed counterbalancing so half of the participants saw the disclosure video first and the other half saw it second. Participants rated
the PWS after watching the first video then immediately watched and then rated the PWS from the second video. They found that participants rated a PWS who disclosed their stutter significantly more favorably than the PWS who did not disclose their stutter on the 14 personality items; participants also gave significantly more positive responses on free response questions.

In contrast, Healey, Gabel, Daniels, and Kawai (2007) had participants view only one PWS under one of three conditions: (a) disclosure before the monologue, (b) disclosure at the end of the monologue, and (c) no disclosure. The authors found no significant differences on five of six personality characteristic measures and no significant differences in the percentage of positive responses on free response questions across all three conditions.

Authors of a third study (Lee & Manning, 2010) attempted to explain these contradictory findings by conceptually replicating both the Blood and Collins (1990) study and the Healey et al (2007) study in order to contrast their research designs. First, they replicated Healey et al’s study and found similar non-significant results. Second, they replicated Blood and Collins study and found similar significant results. They concluded that the important factor was that Blood and Collins had each participant view two videos, one with a PWS who did not disclose, the second with a PWS who did disclose, this allowed participants to compare the PWS who disclosed to a PWS who did not disclose (or vice versa depending on the order). They concluded that it was this contrast that significantly influenced participants’ ratings.

Researchers have also found that stuttering interferes with listeners’ recall of message content (for a review see Healey, 2010). In a recent study by Panico and Healey (2009), participants recalled less information from a monologue read by a PWS compared to the same
monologue read by an individual who did not stutter. To the knowledge of the author of the present study, there have not been any studies measuring the effects of disclosure of stuttering on memory recall of monologue content.

**The Present Study**

The present study is a conceptual replication of the Healey et al. (2007) study that did not provide a comparison or contrast between disclosure and non-disclosure PWS. In typical situations, an individual would not have an opportunity to compare a stutterer who discloses to a stutterer who does not disclose. We believe other factors in addition to not having a comparison PWS may have influenced the results of Healey et al.’s study. The social desirability bias may influence participants’ ratings to a larger degree when there is not a comparison PWS video present. When participants of the Blood and Collins (1990) and Lee and Manning (2010) studies viewed the second video, to compare and contrast to the first, and noticed that in one a PWS disclosed and the other did not, the effects of social desirability might have decreased because they saw an obvious difference, thus making it less undesirable to respond negatively. We believe social desirability may have mediated the results of the three disclosure studies presented above.

Within the present study there were four hypotheses: (a) disclosure of stuttering by a PWS during a monologue (at the beginning, end, or not at all) would affect participants perceptions of the PWS as indicated by ratings of personality traits; (b) participants’ memory of monologue content would be affected by disclosure and non-disclosure of stuttering; (c) consistent with previous literature, gender differences in listener ratings would be observed; and (d) social desirability would covary with participants ratings of a PWS.
Methods

Participants

A total of 103 adults participated and completed the online survey. Completion was defined as answering all questions (participants were given the option to refuse to answer any question). Participants were excluded if any of the following criteria was met: Self identified as a stutterer or reported watching the stimulus video anything other than from beginning to end only one time. Sixteen participants were excluded because they watched the video either more than one time or only partially. Additionally, five participants were excluded for self-identifying as a stutterer. This left a total of 82 adults (52 females and 30 males) who completed the online survey and met the inclusion criteria. The participants ranged in age from 18-64 years (M = 26.05 year; S.D. = 11 year). Following is a breakdown of the number of participants according to age: 18-22 (n = 47), 23-29 (n = 17), 30-39 (n = 6), 40-49 (n = 7), 50-59 (n = 4), and 60-64 (n = 1). The breakdown of self-identification of race/ethnicity is as follows: Caucasian (n = 57; 69.5%), Asian/Pacific Islander (n = 17; 20.7%), Hispanic (n = 3; 3.6%), multi-racial (n = 3; 3.6%), and Black/African American (n = 2; 2.4%). The current online study was posted as “factors that influence listener perceptions” to avoid potential priming effects of the word stutter, and it appeared as a hyperlink that directed the participant to the beginning of the survey.

Stimuli

Stimuli used in this study were three videotaped conditions (described below) in which a 30 year-old male who stutters spoke just to the right of the camera (as if talking to someone off-screen who never spoke) and engaged in a monologue about his grandfather (see Appendix A for
a transcript of the video). Each condition was derived from a single video with either the beginning disclosure, end disclosure, or both removed from the video. The video was filmed in a small room with the PWS sitting approximately 15 feet away from the camera; small plant, a box of tissue, and a small mirror were viewable against the neutral-beige wall of the background. The PWS was dressed in a collared shirt and cardigan sweater and was viewed from the waist up.

Each condition started with a view of the speaker sitting quietly. The PWS then began speaking as if answering a question about his grandfather that had been previously asked, but not video-taped. The monologue describing the PWS grandfather was scripted and was almost identical to the Grandfather Passage which is used by speech-language pathologists to assess individuals’ fluency and voice quality. The script was memorized by the PWS and spoken in a natural and conversational manner; however, the script was also pinned to the wall behind the camera to ensure accurate recall. The PWS was an individual who has a mild stutter but spoke with a simulated severe stutter which included multiple audible prolongations, repetitions, and blocks with facial grimaces and physical concomitants to accurately reproduce severe stuttering behavior.

Three independent judges trained in fluency analysis assessed video condition one for severity (all conditions had a maximum of 1% difference in the ratio between syllables stuttered to not stuttered). The assessment measure used was the Stuttering Severity Instrument fourth-edition (SSI-4). The judges were all speech-language pathology graduate students who volunteered to assist in the present study, however, they were not aware of the purpose of the study or the video. Three overall scores were obtained with an average of 32 which is categorized as severe according to the SSI-4.
**Condition 1.** In this condition, self-disclosure of stuttering took place at the beginning of the monologue. Specifically, the PWS said, “Before I start, I should let you know that I have stuttered all of my life, so this might be hard in spots, so bear with me.” After a brief pause, to allow video editing for other conditions, the PWS continued on to the scripted Grandfather Passage. Including the beginning disclosure and the Grandfather Passage the monologue consisted of 208 syllables. The PWS stuttered on 30 syllables or 14% of the total syllables. The duration of this condition was 4 min, 10s.

**Condition 2.** The disclosure for this condition came after completion of the Grandfather Passage. The PWS stated, “I should let you know that was hard for me in spots. I have stuttered all my life and I appreciate you bearing with me.” The total syllables for this condition, including the Grandfather Passage and the disclosure at the end, were 208. This condition had 30 syllables stuttered or 14% of the total syllables. The duration of this condition was 4 min, 7s.

**Condition 3.** This condition had no disclosure at any point of the monologue. The PWS only spoke the Grandfather Passage that contained 178 total syllables. The PWS stuttered on 27 syllables or 15% of the total syllables. The duration of this condition was 3 min, 40s.

**Procedure**

Upon entering the study site, participants were presented with the informed consent document (see Appendix B). Physical signed consent forms were not possible given that this was an online survey; however, participants indicated their consent by agreeing to the terms of the study as outlined in the informed consent document (indicated on their computer screen by clicking a checkbox). Individuals who do not wish to participate could exit the study at any time without penalty.
After providing informed consent and clicking “Next” a new screen appeared which informed participants that they would view a short video followed by a series of questions. They were also instructed to check that their speakers were on and adjusted to a comfortable audio level. Clicking the “Next” button introduced a random assignment to either condition one, two, or three and caused the matching video to begin. After the video participants were instructed to click the “Next” button; the new screen contained the manipulation check where participants indicated their viewing experience. This manipulation check was introduced to ensure participants were able to watch the entire video from beginning to end. Also, due to the survey software that allowed the video to be re-watched, the manipulation was used to check whether the participant had viewed the video more than once.

Following the manipulation check participants were asked to answer five multiple choice memory recall questions (see Appendix C). Clicking the “Next” button took participants to a new screen where they were asked to rate the PWS on 13 Likert-scale statements wherein they rated personality characteristics of the PWS in the video. Ratings were based on a scale of 1-7 (1 = strong disagree and 7 = strongly agree). The 13 statements were:

1. This person is confident.

2. This person is intelligent.

3. This person is competent.

4. This person speaks fluently.

5. This person speaks persuasively.

6. I am comfortable listening to this person.
7. This person seems sincere.

8. This person is likeable.

9. This person is trustworthy.

10. This person is emotionally well adjusted.

11. This person is sociable.

12. This person is comfortable speaking.

13. This person is physically normal.

Once participants completed the Likert-scale questions they completed the Social Desirability Scale (Crowne & Marlowe, 1960; see Appendix D) which contained 33 true-false questions. After completing the Social Desirability Index, participants completed a short demographics questionnaire (Appendix E) followed by a screen that thanked them for their time and participation.

Results

Likert-scale data

A one-way analysis of variance (ANOVA) was conducted to evaluate the relationship between video condition and ratings on the 13 Likert-scale statements. The independent variable included three conditions: disclosure at the beginning of monologue (condition 1), disclosure at the end of monologue (condition 2), and no disclosure (condition 3). The dependent variables were the 13 Likert-scale statements. The results showed that four of the Likert-scale statements
showed significant differences in average ratings between disclosure conditions. Bonferroni post-hoc analyses were conducted to evaluate pairwise differences among the significant group means. Below are the four significant ANOVA results.

**Intelligence statement.** There was a significant difference in the average ratings for the intelligence statement between the group that viewed the no disclosure condition (M = 5.14, SD = .97) and the group that viewed the disclosure at the beginning (M = 5.93, SD = 1.03), F (2, 79) = 10.1, p < .001, \( \eta^2 = .20 \). There was also a significant difference in average ratings for the intelligence statement between the group that viewed the no disclosure condition (M = 5.14, SD = .97) and the group that viewed the disclosure at the end (M = 6.24, SD = .72). There was no significant difference between the group that viewed the disclosure at the beginning compared to the group that viewed the disclosure at the end. The results indicate that participants who viewed the video with the disclosure at the end and at the beginning rated the speaker significantly more intelligent when compared to the participants who viewed the video with no disclosure.

**Competency statement.** There was a significant difference in the average ratings for the competency statement between the group that viewed the no disclosure condition (M = 5.14, SD = 1.35) and the group that viewed the disclosure at the end (M = 5.92, SD = .86), F (2, 79) = 3.19, p = .047, \( \eta^2 = .07 \). There was no significant difference between the group that viewed the disclosure at the beginning and the group that viewed the disclosure at the end or between the group that viewed disclosure at the beginning and the group that viewed no disclosure. These results indicate that participants who viewed the video with the disclosure at the end rated the speaker significantly more competent when compared to the participants who viewed the video with no disclosure.
Speaks fluently statement. There was a significant difference in the average ratings for the speaks fluently statement between the group that viewed the no disclosure condition (M = 2.07, SD = 1.41) and the group that viewed the disclosure at the end (M = 3.44, SD = 1.96), F (2, 79) = 4.04, \( p = .021 \), \( \eta^2 = .09 \). There was no significant difference between the group that viewed the disclosure at the beginning compared to the group that viewed the disclosure at the end or between the group that viewed disclosure at the beginning compared to the group that viewed no disclosure. These results indicate that participants who viewed the video with the disclosure at the end rated the speaker significantly more fluent when compared to the participants who viewed the video with no disclosure.

Sociable statement. There was a significant difference in the average ratings for the sociable statement between the group that viewed the no disclosure condition (M = 4.14, SD = 1.21) and the group that viewed the disclosure at the end (M = 5.24, SD = 1.48), F (2, 79) = 4.35, \( p = .016 \), \( \eta^2 = .10 \). There was no significant difference between the group that viewed the disclosure at the beginning compared to the group that viewed the disclosure at the end or between the group that viewed disclosure at the beginning compared to the group that viewed no disclosure. These results indicate that participants who viewed the video with the disclosure at the end rated the speaker significantly more sociable when compared to the participants who viewed the video with no disclosure.

Memory recall data

A one-way analysis of variance (ANOVA) was conducted to evaluate the relationship between video condition and the number of memory recall questions answered correctly. The independent variable included all three conditions. The dependent variable was number of
questions answered correctly. The results showed no significant difference in average number of correct questions answered between disclosure conditions, \( F(2, 79) = 1.76, p = .179 \).

A series of ad hoc Pearson correlations were performed to determine if the 13 personality ratings covaried with the number of correct memory recall questions. The results of the correlational analyses indicated that eight out of the thirteen correlations were statistically significant.

There were significant positive relationships found between the number of correctly answered memory recall questions and ratings on (a) confidence, \( r(80) = .27, p = .016 \), (b) intelligence, \( r(80) = .32, p = .003 \), (c) competency, \( r(80) = .42, p < .001 \), (d) speaks persuasively, \( r(80) = .23, p = .041 \), (e) sincerity, \( r(80) = .28, p = .011 \), (f) likeability, \( r(80) = .33, p = .002 \), (g) emotionally well adjusted, \( r(80) = .35, p = .001 \), and (h) sociability, \( r(80) = .38, p < .001 \). These results indicate that as the number of memory recall questions answered correctly increased so did ratings of the PWS on confidence, intelligence, competency, speaks persuasively, sincerity, likeability, emotionally well adjusted, and sociability.

Next, correlation analyses were conducted to determine if the correlations between questions answered correctly and ratings on personality traits were consistent across disclosure conditions. Within the no disclosure condition, three significant correlations were found: (a) competency, \( r(26) = .54, p = .003 \), (b) sincerity, \( r(26) = .45, p = .017 \), and (c) likeability \( r(80) = .42, p = .028 \). Within the disclosure at the end condition, five significant correlations were found: (a) confidence, \( r(23) = .41, p = .044 \), (b) competency, \( r(23) = .48, p = .016 \), (c) sincerity, \( r(23) = .49, p = .013 \), (d) emotionally well adjusted, \( r(23) = .63, p = .001 \), and (e) sociable, \( r(23) = .50, p = .012 \). The results indicate that the correlations between questions answered correctly and
ratings on personality traits are nonexistent in the disclosure at the beginning condition, and present in the disclosure at the end condition and no disclosure condition.

Finally, an independent samples \( t \) test was conducted to determine if any difference existed between participants who reported at least some contact with PWS (\( N = 28 \)) and participants who reported no contact with PWS (\( N = 54 \)) on the number of questions answered correctly. This difference was significant, \( t(80) = 2.14, p = .035 \). Participants who reported some contact with PWS (\( M = 3.93, SD = 1.22 \)), on average, answered significantly more questions correctly than those who reported no contact with PWS (\( M = 3.26, SD = 1.4 \)). The eta-squared (\( \eta^2 = 0.05 \)) effect size index was small and indicated that 5% of the variance in the number of correct answers was accounted for by whether a participant reported no contact or at least some contact with a PWS.

**Social desirability covariate**

Correlation analyses were conducted to assess the relationship between social desirability scores and ratings on personality traits across the three disclosure conditions.

Two significant positive correlations were found between social desirability scores and personality trait ratings for participants in the disclosure at beginning condition: intelligence, \( r(27) = .39, p = .036 \), and comfortable listening, \( r(27) = .49, p = .007 \). No significant correlations were found in the disclosure at end condition. Three significant positive correlations were found for the no disclosure condition: (a) confident, \( r(26) = .41, p = .030 \), competent, \( r(26) = .49, p = .008 \), and sincere, \( r(26) = .55, p = .003 \). Overall, the results indicate that social desirability scores were not related to ratings on personality traits in a predictable pattern.
Gender

An independent sample $t$ test was conducted to determine if there were any gender differences on personality ratings. There were no significant results across all 13 personality traits. A split file independent sample $t$ test was performed to determine if there were any gender differences on personality ratings based on condition. There were no significant results for the disclosure at the beginning condition and for the no disclosure condition. There were five significant $t$ test results for the disclosure at the end condition: (a) intelligent, $t(23) = 3.66, p = .001$, (b) competent, $t(23) = 2.23, p = .036$, (c) sincere, $t(23) = 4.37, p < .001$, (d) likeable, $t(23) = 2.22, p = .036$, and (e) physically normal, $t(23) = 2.58, p = .017$.

Discussion

The primary purpose of this investigation was to further examine the effects of self-disclosure of stuttering on listener perceptions. Several previous studies have been conducted on this topic which resulted in inconsistent findings. This study was done in part to attempt to explain the inconsistent results. Collins and Blood (1990) investigated disclosure of stuttering and had participants watch two short videos, one with a PWS who disclosed their stutter at the end of the monologue, and a second where they did not disclose their stutter at any point. They found that participants rated a PWS who disclosed their stutter significantly more favorably than the PWS who did not disclose their stutter on all 14 personality traits. They concluded that, “nonstutterers prefer to interact with stutterers who acknowledge their stuttering.” (p. 78).

Healey et al. (2007) conducted a study design very similar to the present study. They had three conditions, disclosure at the beginning, end, or not at all and had participants rate the PWS on six
Likert-scale personality traits. They found that participants who viewed the PWS who disclosed at the end of the monologue rated the PWS as significantly more friendly, no other significant results were found. Finally, Lee and Manning (2010) found results similar to Collins and Blood (1990). They concluded that the important factor was that participants were able to view two videos, one with a PWS who did not disclosure their stutter, and a second with a PWS who did disclose their stutter; they hypothesized that the opportunity to contrast these two types of disclosures was the reason for the significant findings.

The results of the present study will be discussed in relation to Collins and Blood (1990) and Healey et al. (2007) studies and not to Lee and Manning’s (2010) study because they only analyzed differences in the combined overall mean of all their personality measures so it is not known which of the 21 traits they measured contributed to their significant results.

**Hypothesis 1: Disclosure and personality ratings**

The Likert-scale results of the present study are mostly consistent with the studies mentioned previously: generally, disclosure at the end was influential and disclosure at the beginning was not (when compared to no disclosure). The results indicate that significant differences in the three disclosure conditions do exist. Disclosure at the end compared to no disclosure effected listener perceptions to the greatest degree. Differences in personality traits between the disclosure at the beginning and disclosure at the end were never significant; however, differences in personality traits that were present generally favored disclosure at the end (i.e. the PWS received slightly higher ratings), which is significant with Healey et al.’s (2007) results. Intelligence was the only personality trait found to be significant for both disclosure at the end and disclosure at the beginning compared to no disclosure. This difference
in perception of PWS level of intelligence between disclosure and no disclosure is consistent with Collins and Blood’s (1990) results; Healey et al. (2007) did not have participant’s rate intelligence. The PWS was perceived as more intelligent when the PWS disclosed his stutter, both at the beginning and at the end. Within the present study, the PWS was perceived as more sociable, which is congruent with Collins and Blood’s (1990) results; as well as more competent when disclosure of stutter came at the end. It is also of interest that participants rated the PWS as significantly more fluent when disclosure occurred at the end of the monologue.

Within the present study, all but two of Healey et al.’s (2007) study Likert-scale measurements were used (we did not measure character or friendliness). The results of the present study replicated theirs in that significant differences across conditions were not found for sincerity, trustworthiness, likeability, and emotionally adjusted.

Overall, the PWS was rated more favorably when disclosure occurred at the end. This surprised us even though Healey et al. (2007) found fairly consistent results. We hypothesized that the disclosure coming immediately before the ratings, as is the case in the disclosure at the end condition, may influence peoples’ perceptions of the PWS more because of the proximity of disclosure and rating. It would be interesting for future research to have participants rate the PWS after a short rest period. Furthermore, though not significant, the speaker within the no disclosure condition received slightly higher ratings on being confident, sincere, likeable, and comfortable speaking when compared to responses within the disclosure at the beginning condition. Disclosure in general appears to have a positive impact on listener impressions. Our research suggests that a severe stutterer is likely to benefit during an interaction when stuttering is disclosed. Our results support previous research that advocates the use of disclosure to benefit PWS communicative situations.
Hypothesis 2: Memory recall and disclosure

Our second hypothesis was that there would be differences between the three conditions on the number of correctly answered memory recall questions. We found no support for this hypothesis. However, it is notable that significant positive correlations were found in the no disclosure condition between correctly answered questions and ratings on competency, sincerity and likeability. Significant positive correlations were found in the disclosure at the end condition between correctly answered questions and ratings on competence, confidence, sincerity, emotionally well adjusted, and sociable. These results indicate that as positive perceptions of the PWS increase so too did memory recall of the content spoken when the PWS discloses at the end of a monologue or not at all.

We also found that participants who had some form of contact with PWS tended to correctly answer more memory recall questions than participants who reported no previous contact with PWS. This may be due to the ability to allocate more attentional resources to content rather than thinking about the process of stuttering and its novel effects on the speaker (e.g. physical concomitants like head jerks, facial grimaces, pounding foot and auditory prolongations, repetitions, and blocks).

Hypothesis 3: Gender differences

Burley and Rinaldi (1986) reported gender differences in perceptions of the stutterer. They reported that male listeners rated stutterers significantly less favorably than women on a number of personality traits. Our results did not indicate gender differences across all three conditions. However, when conditions were examined independently, there were significant differences within the disclosure at the end condition. Our results suggest that females rated the
PWS significantly more favorably on intelligence, competency, sincerity, likeability, and being physically normal only when disclosure came at the end. This may be a topic for future research as gender differences in disclosure effectiveness may have clinical applications. It may be the case that men view disclosure as evidence of weakness, or view disclosure as unnecessary or attention and compassion seeking – traits that are not normally valued in stereotypical male culture. In contrast, freely talking about ones vulnerabilities is often valued by stereotypical female culture.

**Hypothesis 4: Social desirability covariate**

Our primary hypothesis was that social desirability would have a larger effect on listeners’ perception of PWS when no comparison video was offered. Our findings were not robust but indicated that social desirability scores were correlated with ratings on some personality traits in the no disclosure and the disclosure at the beginning conditions. The disclosure at the end condition revealed no correlations between any ratings and social desirability scores which imply that participants were more honest in their ratings of the PWS regardless of their overall susceptibility to the social desirability bias. The correlations that we did find ranged from small to medium according to Cohen’s (1988) guidelines so it is clear that the social desirability bias does influence how people rate PWS. However, it differentially influences ratings depending on when disclosure is stated or not given at all. Our results suggest that social desirability is a factor that must be accounted for in future research.

**Limitations**

As with many psychological studies, our sample was primarily Caucasian adults between the ages of 18-22. The generalizability of our findings is questionable beyond this population.
Furthermore, we had to exclude 21 participants who completed the survey for various reasons. Our survey methodology may not be the most effective form of video presentation due to extraneous variables that we cannot control for (e.g. the environment the participant watches the video). Also, our study design did not allow us to truly compare the effects of the social desirability bias between the type of methodology employed by Collins and Blood (1990) and Lee and Manning (2010), who had participants view two videos, and our study which only had participants view one video with no comparison. It may be informative for future researchers to investigate the potential differential effects of the social desirability bias on these two types of methodologies. Another limitation is that we employed only a male PWS; to our knowledge no studies have been done on the effects of disclosure on a female PWS. We also included participants who reported some contact with PWS, this may have influenced our results. Support for this limitation is found in our own results where we found differences between number of correctly recalled questions depending on contact reported. Finally, it is important to note that our monologue was fundamentally different than those employed in previous research which had the PWS talk about a job they once had. Our study did not have such connotations, was more conversational, and makes comparison between these studies more complicated. However, we recommend future research to include a variety of monologues such as persuasive or informative monologues. We believe there may be meaningful differences between types of monologues given which may have clinical and real life applications for PWS. For instance, being interviewed for a job may be considered persuasive because an individual is trying to “sell” themselves as the best candidate. It would be useful for a PWS to know if disclosure at a certain point or no disclosure at all would differentially effect employers perceptions.
Conclusion

It is clear from the results of the present study that disclosure does influence listener perceptions of PWS and that the social desirability bias must be accounted or controlled for in future research on this topic. It also appears to effect memory recall of the PWS monologue content, although through what mechanism is not currently known. Finally, there is a potential gender difference in how effective disclosure is at certain time points.
References


Appendices

Appendix A

The following is an adapted version of the Grandfather Passage used as the monologue for every condition:

“You wish to know all about my grandfather. Well, he is nearly 93 years old; He dresses himself in an ancient, black frock coat, usually minus several buttons; yet he still thinks as swiftly as ever. A long, flowing beard clings to his chin, giving those who observe him a pronounced feeling of the utmost respect. When he speaks his voice is just a bit cracked and quivers a trifle. Twice each day he plays skillfully and with zest upon our small organ. Except in the winter when the ooze or snow or ice prevents, he slowly takes a short walk in the open air each day. We have often urged him to walk more and smoke less but he always answers, "Banana oil!" Grandfather likes to be modern in his language.”
Appendix B

Informed Consent

1. Study Personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Justin Potts</th>
<th>Shawn Davis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role</td>
<td>Principle Investigator</td>
<td>Faculty Advisor</td>
</tr>
<tr>
<td>Institution</td>
<td>Pacific University</td>
<td>Pacific University</td>
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<tr>
<td>Program</td>
<td>School of Professional Psychology</td>
<td>School of Professional Psychology</td>
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<tr>
<td>Email</td>
<td><a href="mailto:justinpotts@pacificu.edu">justinpotts@pacificu.edu</a></td>
<td><a href="mailto:davissh@pacificu.edu">davissh@pacificu.edu</a></td>
</tr>
<tr>
<td>Telephone</td>
<td>801-913-2045</td>
<td>503-352-7319</td>
</tr>
</tbody>
</table>

2. Study Invitation, Purpose, Location, and Dates

You are invited to participate in a research study about listener perceptions.

The study is expected to begin after IRB approval and to be completed by June 2013. All study information will be collected via the Internet and stored on a secure account owned by the principle investigator. The principle investigator is a graduate student at the School of Professional Psychology, which is a part of Pacific University’s College of Health Professions.

3. Participant Characteristics and Exclusionary Criteria

To participate in this study you must be at least 18 years of age. If you are below the age of 18, please exit this survey immediately by closing the browser window.
4. Study Materials and Procedures

In this study you will be asked to watch a short video followed by a series of brief questions. You will also be asked to provide demographic information.

Your participation is completely anonymous. There is no means of associating any information that you provide with you personally.

You may opt out of the study at any time by closing the browser window. If you choose to exit the survey prior to completion, none of your information provided to that point will be used.

It should take approximately 15 minutes to complete the survey.

5. Risks, Risk Reduction Steps, and Clinical Alternatives

a. Anticipated Risks and Strategies to Minimize or Avoid Risk

Any risks involved in participation are minimal and are not greater than those ordinarily experienced in daily life or during normal computer use. You are free to not answer any question that you feel uncomfortable answering and are free to withdraw participation at any time without penalty.

All data collected will be strictly anonymous. SurveyGizmo allows the survey administer to determine whether or not to collect IP addresses as part of the survey data; IP addresses will not be collected during any phase of this study to insure anonymity. However, it is important to note that the security of information transmitted through the internet cannot be guaranteed.

b. Unknown Risks

It is possible that participation in this study may expose you to currently unforeseeable risks.

c. Advantageous Clinical Alternatives

This study does not involve experimental clinical trials.

6. Adverse Event Handling and Reporting Plan

In the event that you become sick, injured, distressed, or otherwise uncomfortable as a result of your involvement in the research study, you may stop your participation immediately. If such an event occurs, promptly notify the principal investigator or the Pacific University Institutional Review Board.
If the investigator(s) become aware of an adverse event, the IRB office will be notified by the next normal business day for minor events and within 24 hours for major events.

7. Direct Benefits and/or Payment to Participants

a. Benefit(s)

There is no direct benefit to you as a study participant.

b. Payment(s) or Reward(s)

You will not be paid for your participation.

8. Promise of Privacy

Your participation in this study is anonymous. This means that there are no means of associating any information that you provide with you personally. Not even the principle investigator will be able to associate you personally with your answers. However, it is important to know that the security of information transmitted through the internet cannot be guaranteed.

Results from your participation will be available only to the experimenters. Furthermore, only the principle investigator will have access to the raw data of the survey (i.e. your individual responses). If a publication or conference presentation results from this experiment, and findings are presented, all information will be presented in terms of group data; no responses from a single individual will be presented.

9. Voluntary Nature of the Study

Your decision whether or not to participate will not affect your current or future relations with Pacific University. If you decide to participate, you are free to not answer any question or withdraw at any time without prejudice or negative consequences. If you choose to withdraw after beginning the study by closing your browser your participation will be ended. In this situation, all data collected to that point will be erased and not used in any analyses. It will not be possible to withdraw from the study after completing the entire study survey, due to its anonymous nature.

10. Contacts and Questions

The investigator(s) will be happy to answer any questions you may have at any time during the course of the study. If you are not satisfied with the answers you receive, please call the Pacific University Institutional Review Board at 503-352-1478 to discuss your questions or concerns further.

If you have questions about your rights as a research subject, or if you experience a research-related injury of any kind, please contact the investigator(s) and/or the IRB office. All concerns and questions will be kept in confidence.
11. Statement of Consent

Since this is an on-line survey, signatures cannot be obtained. By clicking the “I Agree” box I understand I will be taken to the study and that my continued participation in the survey denotes my consent to the following:

I have read and understand the above. All my questions have been answered. I am 18 years of age or over and agree to voluntarily participate in the study. I have read and understand the description of my participation duties and I understand that I can print a copy of this form to keep for my records.

To print a copy of this informed consent, or to record the contact information for the IRB and the investigators you can print this document by clicking the “print this document” button below. Remember that if you choose not to participate or to withdraw from participation, you can close your web browser at any time.
Appendix C

Memory Question Items

1. How old was his grandfather?
A. In his 70’s
B. In his 60’s
C. In his 80’s
D. In his 90’s

2. His grandfathers voice was…
A. deep and rich
B. slow and steady
C. cracked and quivery
D. paced and respectful

3. The speaker urged his Grandfather to…
A. smoke less
B. talk less
C. walk less
D. yell less

4. What length was the Grandfathers beard?
A. Short and wiry
B. Short and scruffy
C. Long and flowing
D. Long and thick

5. What instrument did his Grandfather play?
A. Harmonica
B. Organ
C. Piano
D. Fiddle
Appendix D

Crowne-Marlowe Social Desirability Scale

1. Before voting I thoroughly investigate the qualifications of all the candidates.
   A. True
   B. False

2. I never hesitate to go out of my way to help someone in trouble.
   A. True
   B. False

3. It is sometimes hard for me to go on with my work if I am not encouraged.
   A. True
   B. False

4. I have never intensely disliked anyone.
   A. True
   B. False

5. On occasions I have had doubts about my ability to succeed in life.
   A. True
   B. False

6. I sometimes feel resentful when I don’t get my way.
   A. True
   B. False

7. I am always careful about my manner of dress.
   A. True
   B. False

8. My table manners at home are as good as when I eat out in a restaurant.
   A. True
   B. False

9. If I could get into a movie without paying and be sure I was not seen I would probably do it.
   A. True
   B. False

10. On a few occasions, I have given up something because I thought too little of my ability.
    A. True
    B. False

11. I like to gossip at times.
    A. True
    B. False

12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
    A. True
    B. False

13. No matter who I’m talking to, I’m always a good listener.
    A. True
    B. False
14. I can remember “playing sick” to get out of something.
   A. True
   B. False

15. There have been occasions when I have taken advantage of someone.
   A. True
   B. False

16. I’m always willing to admit it when I make a mistake.
   A. True
   B. False

17. I always try to practice what I preach.
   A. True
   B. False

18. I don’t find it particularly difficult to get along with loudmouthed, obnoxious people.
   A. True
   B. False

19. I sometimes try to get even rather than forgive and forget.
   A. True
   B. False

20. When I don’t know something I don’t mind at all admitting it.
   A. True
   B. False

21. I am always courteous, even to people who are disagreeable.
   A. True
   B. False

22. At times I have really insisted on having things my own way.
   A. True
   B. False

23. There have been occasions when I felt like smashing things.
   A. True
   B. False

24. I would never think of letting someone else be punished for my wrong-doings.
   A. True
   B. False

25. I never resent being asked to return a favor.
   A. True
   B. False

26. I have never been irked when people expressed ideas very different from my own.
   A. True
   B. False

27. I never make a long trip without checking the safety of my car.
   A. True
   B. False

28. There have been times when I was quite jealous of the good fortune of others.
   A. True
   B. False
29. I have almost never felt the urge to tell someone off.
   A. True  
   B. False  

30. I am sometimes irritated by people who ask favors of me.
   A. True  
   B. False  

31. I have never felt that I was punished without cause.
   A. True  
   B. False  

32. I sometimes think when people have a misfortune they only got what they deserved.
   A. True  
   B. False  

33. I have never deliberately said something that hurt someone’s feelings.
   A. True  
   B. False
Appendix E

Demographics Questionnaire

1. What is your age? _____ (free response box)

2. What gender do you most identify with? _____________ (drop down menu)
   - Male
   - Female
   - Other

3. What race/ethnicity do you most identify with? (drop down menu)
   - Asian/Pacific Islander
   - Black/African-American
   - Caucasian
   - Hispanic
   - Native American/Alaska Native
   - Other/Multi-Racial
   - Decline to Respond

4. Where were you born? (drop box of all countries)

5. What state is your primary residence (if inside the U.S.A.)? (Drop box list of all US states)

6. What is your level of traditional education? (drop down menu)
   - 12th grade or less
   - Graduated high school or equivalent
   - Some college, no degree
   - Associate degree
   - Bachelor's degree
   - Post-graduate degree

7. Please indicate your relationship status: (drop down menu)
   - Married or Partnered
   - In a relationship
   - Single

8. Are you a stutterer? (multiple choice)
   - Yes
   - No
9. Do any of your family members stutter? (multiple choice)
   - Yes
   - No

10. Have you ever had any substantial contact with a person who stutters? (multiple choice)
    - Yes (please briefly describe in box below)
    - No

11. In your opinion why do people stutter? (Please briefly answer in box below)