THE EFFECTS OF SELF-DISCLOSURE ON THE COMMUNICATIVE INTERACTION BETWEEN A
PERSON WHO STUTTERS AND A
NORMALLY FLUENT SPEAKER

A Dissertation
Submitted to
the Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
DOCTOR OF PHILOSOPHY

by
James M. Mancinelli
December 2016

Examining Committee Members:

Jamie Reilly, PhD, Advisory Chair, Department of Communication Sciences and Disorders
Carol Scheffner Hammer, PhD, Columbia University, Former Chair Department of
Communication Sciences and Disorders, Temple University
Reinhardt Heuer, PhD, Professor Emeritus, Department of Communication Sciences and
Disorders
Barbara Amster, PhD, La Salle University, Department of Communication Sciences and
Disorders
Michael C. Boyle, PhD, Montclair State University, Department of Communication
Sciences and Disorders
Barbara A. Wasik, PhD, Temple University, College of Education

©
Copyright
2016

by

James Mark Mancinelli
All Rights Reserved

ABSTRACT

Self-disclosure is a commonly used therapeutic technique with people who stutter to facilitate self-acceptance and reduce the effects that the stigmatizing views and stereotypes held by the public can have on their communicative interactions. Although there are data on the benefits of self-disclosure from the perspective of the listener, there are no data on the value of self-disclosure from the perspective of the person who stutters. The purpose of this study was to investigate the benefit of self-disclosure from the perspective of the person who stutters in a conversational interaction using a Map task with a normally fluent speaker. The cognitive-affective variables under investigation were self-perception of stuttering severity, comfort, cognitive effort, anxiety, and benefit in a disclosed and non-disclosed condition. The speech variables under consideration in the disclosed and non-disclosed conditions were total syllables, percent syllables stuttered, and total word count. In order to measure level of stigma, the *Self-Stigma of Stuttering Scale (4S)* (Boyle, 2012) was used. Participants were 25 adults (18-73 years of age) recruited from the La Salle University Speech-Language-Hearing Clinics, National Stuttering Association support groups in Philadelphia and New Jersey, and through social media. The results of the investigation revealed that the participants were equivocal about the benefit of self-disclosure, and that there were non-significant differences for the cognitive-affective variables across conditions. Some positive effects on the speech variables were noted in the non-disclosed state only. All participants demonstrated overall self-stigma based on their 4S scores, but stigma was not acting as a moderating variable for the cognitive-affective or speech variables. It was concluded that from the perspective of the person who stutters, neither self-disclosure nor overall level of self-stigma are playing a decisive role during the communicative interaction with a normally fluent speaker. The implications of these findings are discussed.

For Scott James, not forgotten

(1962-1962)

ACKNOWLEDGMENTS

Thanks to my dissertation committee: Dr. Jamie Reilly, Dr. Carol Scheffner Hammer, Dr. Barbara Amster, Dr. Michael Boyle, Dr. Bud Heuer, and Dr. Barbara Wasik. A special thanks to Dr. Carol Scheffner Hammer, who took me on under atypical circumstances. You made me a clearer thinker and a much better writer and I am very grateful for your kindnesses and support.

Thanks to the people who stutter who volunteered to participate in this study. Your willingness to take the time to participate and your commitment to helping others is admirable.

Thanks to Pete Ondish for his expert statistical guidance.

Thanks to my efficient and diligent research assistants who were solidly committed to the work at hand: Annie Briskey, Shannon Fitzsimmons Richardson, Kendra Heyer, Francine Krane, Katilyn Lavin, Meagan Leonard, Erica Nix, and Kelsey Yaiser.

Thanks to my colleagues in the Department of Communication Sciences and Disorders at La Salle University for their constant support and quiet cheerleading: Dr. Evelyn Klein, Dr. Jennifer Kleinow, Dr. Cesar Ruiz, Dr. Joan Luckhurst, Dr. Mitchell Trichon, Ms. Maureen Costello-Yacono, and Dr. Dana Bitetti. A special thanks to Barbara Amster who started the ball rolling and whose support and counseling lightened the load.

Thanks to all the folks who participated in Paper Slate at Temple University. Your close reading of my work and astute comments moved the writing forward and improved the final product.

Thanks to Dr. Zeb Kendrick and Dr. Brian Goldstein for smoothing the road.

Thanks to my parents who never doubted. Finally, thanks to my partner in life, Dave, who kept me tied to the earth when I wanted to float away. Toujours, mon cher.

TABLE OF CONTENTS

	Page
ABSTRACT.....	iii
DEDICATION	iv
ACKNOWLEDGMENTS.....	v
LIST OF TABLES.....	x
LIST OF FIGURES.....	xi
 CHAPTER	
1. INTRODUCTION	1
2. REVIEW OF LITERATURE	4
The Sociology of Stuttering.....	5
Symbolic Interactionism	6
Social Identity	8
The Stigmatizing Nature of Stuttering.....	10
Self-Disclosure	16
Purpose of the Study	19
3. METHODS	21
Participants and Setting	21
Apparatus.....	23
Materials	24
Self-Report Questionnaire	27
Procedures	30
Training Protocol for the Normally Fluent Speaker (NFS)	30
Training Protocol for Transcribers	31

Participant Protocol	33
Experiment.....	34
Data Analysis.....	37
Transcription Analysis	37
Total Syllables, Percent Syllables Stuttered, and Total Word Count	38
Self-Report Questionnaire	38
The Self-Stigma of Stuttering Scale (4S).....	39
Research Questions	40
4. RESULTS.....	41
Research Question #1	42
Results for Disclosure	42
Descriptive Statistics for SPSS, COM, COGE, and ANX	42
Q5 Benefit (BEN)	46
Results of the Paired t-tests for Dependent Variables SPSS, COM, COGE, ANX, and BEN.....	49
Self-Perception of Stuttering Severity (SPSS).....	49
Comfort (COM).....	49
Cognitive Effort (COGE).....	50
Anxiety (ANX)	50
Benefit (BEN).....	50
Research Question #2	51
Results of the Experiment.....	51
Inter-Rater Reliability	51
Descriptive Statistics for Total Syllables, Percent Syllables Stuttered, and Total Word Count	52

Results of the Paired t-tests on Percent Syllables Stuttered for the Oral Reading Task and in the Dc and NDC Conditions	55
Oral Reading Task.....	55
Results for Total Syllables, Percent Syllables Stuttered, and Total Word Count in the Dc and NDC Conditions	55
Total Syllables	55
Percent Syllables Stuttered.....	56
Total Word Count.....	56
Correlations for SPSS, COM, COGE, ANX, and BEN and Total Syllables, Percent Syllables Stuttered, and Total Word Count	57
Research Question #3	58
Results for Stigma	58
Descriptive Statistics	58
Correlations.....	60
Moderation Analysis: Stigma and SPSS, COM, COGE, ANX and BEN	61
Research Question #4	63
Correlations.....	63
Moderation Analysis: Stigma on Total Syllables, Percent Syllables Stuttered, and Total Word Count.....	63
Additional Analyses Related to Stigma	65
Results for Stigma and Participant's Age	65
Results for Self-Help Group Experience (SHGE) and Overall Self-Stigma	65
5. DISCUSSION	68
The Cognitive-Affective Index	68
Self-Disclosure	69

Stigma.....	73
Age and Self-Help Group Experience (SHGE)	73
The Sociology of Stuttering	74
Limitations of this Study.....	77
Directions for Future Research	79
Conclusion.....	80
REFERENCES CITED.....	82
APPENDICES	
A. PARTICIPANT DEMOGRAPHICS.....	90
B. LETTERS OF INFORMED CONSENT.....	92
C. SELF-REPORT QUESTIONAIRES.....	98
D. INFORMATION GIVER (IG) AND INFORMATION FOLLOWER (IF) MAPS	100
E. INDIVIDUAL DATA FOR DcQ5 (BENEFIT) AND NDcQ5 (BENEFIT)	104
F. INDIVIDUAL RAW DATA ON THE DEPENDENT VARIABLES TSYLL, PSS, AND TWC ACROSS CONDITIONS	106
G. GLOSSARY OF TERMS PERTINENT TO THE SOCIOLOGY OF STUTTERING	107

LIST OF TABLES

Table	Page
1. Descriptive Statistics for the Dependent Variables for the Dc and NDc Conditions.....	43
2. Frequency Distribution of Likert Responses for SPSS, COM, COGE, and ANX Across Conditions.....	44
3. Descriptive Statistics for DcQ5 (BEN) and NDcQ5 (BEN).....	47
4. Frequency Distribution for DcQ5 (BEN) and NDcQ5 (BEN).....	48
5. Inter-Rater Reliability.....	51
6. Descriptive Statistics for Total Syllables, Percent Syllables Stuttered, and Total Word Count	52
7. Significant Correlations for SPSS, COM, and ANX in the NDc Condition.....	57
8. Descriptive Statistics for Overall Self-Stigma Score on the 4S.....	59
9. Results of the Linear Regression Analysis with Overall Self-Stigma as the Moderating Variable.....	62
10. Results of the Linear Regression Analysis for Total Syllables, Percent Syllables Stuttered, and Total Word Count with Overall Self-Stigma Score as the Moderating Variable.....	64
11. Means, Range, and Standard Deviations of Overall Self-stigma Scores based on Self-Help Group Experience (SHGE).....	66

LIST OF FIGURES

Figure	Page
1. The Experimental Setting.....	23
2. Original Maps (Anderson et al., 1991).....	37
3. Means and Standard Errors for SPSS, COM, COGE, and ANX Across Conditions.....	44
4. Means and Standard Errors for DcQ5 (BEN) and NDcQ5 (BEN)..... Across Participants	46
5. Means and Standard Errors for Total Syllables in the Dc and NDc Conditions Across Participants.....	53
6. Means and Standard Errors for Percent Syllables Stuttered in the Reading, Dc and NDc Conditions Across Participants.....	54
7. Means and Standard Errors for Total Word Count in the Dc and NDc Conditions Across Participants.....	54
8. Individual Overall Self-Stigma Scores on the 4S (N = 25).....	59
9. Means and Standard Errors for the Overall Self-Stigma Scores on the 4S Across Participants.....	60

CHAPTER 1

INTRODUCTION

Why does stuttering only emerge during an interaction with specific interactants and for some people who stutter, in specific social contexts? For example, most people who stutter do not stutter when speaking to pets, or babies. In its simplest formulation, stuttering can be defined as a disruption in the flow of speech, but clinical research and practice suggests that stuttering is a dynamic and multifactorial process that incorporates the individual, the listener, and societal reactions to it (Smith & Kelly, 1997; Cooper & De Nil, 1999). As a consequence, stuttering can be viewed as having a sociological element, just as much as it has a psychological, motoric, and behavioral one.

There is oblique reference to the sociological factors that contribute to dysfluency in the literature (Zhang & Kalinowski, 2012) as well as more direct discussion (Sheehan, 1970; Lemert, 1970; Boyle, 2012). Nevertheless, stuttering as a social fact about a person who stutters (PWS) during a communicative interaction has been an overlooked dimension of stuttering (Goffman, 1963; Acton & Hird, 2004; Butler, 2014). Therefore, this study places stuttering within the sociological framework of the communicative interaction. It is then meaningful to investigate the effects of self-disclosure, a commonly used therapeutic technique and the primary goal of this investigation, from the perspective of the PWS during a communicative interaction. As part of the sociological framework, the relationships between the social identity of a PWS, and the role that stigmatization plays in the interaction will also be discussed.

Self-disclosure is a process whereby one individual reveals information about himself to another and there are numerous benefits for doing so, such as a reduction in tension, anxiety, and an increase in comfort (Derlega, Matts, Petronio, & Margulis, 1993; Panchakis, 2007; Ragins,

2008). It is also considered the final step in the self-acceptance process for any stigmatized person, including a PWS (Goffman, 1963). The stuttering literature documents the positive effects of self-disclosure from the listener's perspective (Healey, Gabel, Daniels, & Kawai, 2007; Healey, 2010; Lee & Manning, 2010) but there is no information on the effects of self-disclosure from the perspective of the PWS who is engaged in a conversational interaction. This information would certainly be valuable both diagnostically therapeutically because it can inform treatment planning as well as add another dimension to our understanding of stuttering in a social context.

Conversational interactions between a PWS and a NFS can be a primary threat for a PWS as it places them in a mixed situation, that is, within a social context with a non-stigmatized, normally fluent interactant (Goffman, 1963; Jones et al., 1984; Crocker et al., 1998; Yang et al., 2007; Shelton, Alegre & Son, 2010). Under this threat, the potential for negative effects on affective elements and speech production can increase. In this study, the participants are engaged in an experimental task with a normally fluent speaker (NFS), using a unique methodology that approximates a natural, communicative interaction, once in a disclosed state and once in a non-disclosed state. Affective variables such as self-perception of stuttering severity, comfort, cognitive effort, and anxiety have not been systematically studied in a conversational context between a PWS and a NFS in either state of disclosure. The purpose of this study is to investigate the effects of self-disclosure from the perspective of the PWS by examining both affective and speech production variables in a conversational context, in a disclosed and non-disclosed condition. The ultimate goal of any therapy with a PWS that includes facilitating self-disclosure is to reduce the negative feelings associated with stuttering and foster a more authentic social presentation of the self. It is hypothesized that there will be

positive benefits to self-disclosure for self-perception of stuttering severity, comfort, cognitive effort, and anxiety when compared to the non-disclosed state.

The study includes a thorough review of the literature in Chapter 2 related to self-disclosure in people who stutter, sociological theory that informs self-disclosure in the stigmatized individual, and the social construction of identity and its relevance in the study of stuttering. This is followed in Chapter 3 by a description of the methodology used in this study to create a conversational setting as well as a detailed explanation of the development of the questionnaires, and experimental methods in Chapter 3. In Chapter 4, the results of the statistical analyses are reviewed and Chapter 5 consists of a discussion of those results with both limitations of this study and future directions for further research on this topic presented. A Conclusion provides a brief summation of the investigation.

CHAPTER 2

REVIEW OF THE LITERATURE

Stuttering is a multifactorial disorder, stigmatizing disorder with a strong sociological character, because it affects the communicative interactions between people who stutter (PWS) and normally fluent speakers (NFS) (Sheehan, 1953; Goffman, 1963; Lemert, 1970; Sheehan, 1970; Krause, 1982; Smith & Kelly, 1997; Zhang & Kalinowski, 2012; Boyle, 2013). People who stutter only do so in social contexts, and since statistically 98-99% of speakers are normally fluent (Milisen, 1957; Andrews & Harris, 1964; Ham, 1990; Bloodstein & Bernstein Ratner, 2008), a PWS typically finds himself in social interactions involving one or more speakers who may not be aware that he is a PWS, unless he speaks. Their speech can be affected by the situational threats associated with any form of talk-in-interaction, such as conversations, interviews, depositions, etc. (Goffman, 1963; Jones et al., 1984; Schegloff, 1987; Crocker et al., 1998; ten Have, 2007; Yang et al., 2007; Shelton, Alegre & Son, 2010). These include threats based on the relationship that the PWS has with the other interactant, the role of the other interactant, and/or the type of talk-in-interaction. As a consequence, a PWS uses avoidance techniques such as silence, circumlocution, and word substitutions to present themselves as a fluent speaker and these strategies create tension and stress for a PWS and can even lead to social isolation, all in an attempt to conceal their stuttering (Van Riper, 1982; Starkweather, 1987; Derlega et al., 1993; Bloodstein & Bernstein Ratner, 2008; Manning, 2010). The attempts to conceal stuttering can also lend a peculiarity and inauthenticity to the speech of a PWS which is counterproductive to the goal of appearing as a normally fluent speaker. Therefore, speech-language pathologists often encourage PWS to self-disclose to the listener that they are a PWS, either formally ("I am a person who stutters") or simply by stuttering freely without avoidance. The goals of self-disclosure include reducing the stress and tension associated with attempts to

conceal stuttering, self-acceptance as a PWS by reducing feelings of stigma, with enhanced verbal fluency as a concomitant benefit as attempts to avoid are diminished. It is for this reason that treatment programs address the cognitive, behavioral, and affective elements of the disorder include counseling around the issue of self-disclosure. The decision to reveal their stuttering requires PWS to manage tension and discomfort in the social interaction; whereas, the decision to conceal stuttering during the communicative event requires the PWS to manage this information about themselves during that social interaction (Goffman, 1963). In either instance, the sociological and stigmatizing aspects of the disorder are evident.

The Sociology of Stuttering

The application of a sociological framework to stuttering has explanatory power and a history in the literature (Sheehan, 1953; Sheehan, 1970; Lemert, 1970). Verbal communication is transactional in that the exchange is dyadic and affected and influenced by context, culture, roles, and social relationships (Goffman, 1964; DeFleur, Kearney, Plax, & DeFleur, 2005). Thus, the sociological character of stuttering comes into relief because the fluency of a PWS can be affected by the elements of context, culture, roles, and social relationships (Lemert, 1970). Systematic investigations into the sociological nature of stuttering have been rare (Fraser & Scherer, 1982; Acton & Hird, 2004) and this is an unfortunate miscalculation because examining stuttering as embedded within the social interaction may permit an evaluation of the value of self-disclosure during a communicative interaction because the process of self-disclosure is inherently a transactional one. The interaction between the PWS, the listener and the social context is constructed, evaluated and interpreted by both parties and this interpretation can be framed very differently for each interactant (Goffman, 1986). For example, the NFS can frame a communicative interaction with a PWS based on publicly held stereotypes about people who stutter, or simply accept the fact without pre-conceived notions. On the other hand, a PWS may

frame the same interaction as a negative experience based on assumptions that he may have about the listener's perceptions of people who stutter. Thus, framing a communicative interaction for a PWS necessarily includes decisions about his social presentation and social identity in that context; that is, whether to avoid stuttering and make attempts to present himself as a NFS or to stutter freely.

Symbolic Interactionism

Symbolic interactionism closely examined the way the social identity of an individual develops through his interaction with the world, how that interaction is framed by each individual, and how it is interpreted and evaluated for meaning. Symbolic interactionism understands human interactions in this very distinctive and particular way, viewing a social interaction as interactants interpreting and evaluating each other's actions instead of merely reacting to them (Goffman, 1963; Blumer, 1969). Furthermore, even though individuals may have encountered the same social contexts in the past, evaluation and interpretation of those or similar situations do occur when they are encountered again (Blumer, 1969). Individuals respond and react to *situations* as opposed to culture and/or sociological framework (Blumer, 1969). People who stutter are aware of the reactions of their listeners (Yovetich & Dolgoy, 2001; Bernstein Ratner & Bloodstein, 2008) but it is the interpretation of those reactions by a PWS that affects the ongoing action of the communicative event. The positive or negative meaning of that interpretation is idiosyncratic and variable, but its impact on the constructed interaction can have immediate effects for the PWS, such as anxiety, fear, discomfort, and guilt. Because stuttering emerges during social interactions as a result of a confluence or integration of many variables and idiosyncratic factors (Smith & Kelly, 1997), understanding how

interactions are constructed can shed light on how a PWS views and understands those interactions.

This perspective can inform the study of dysfluency, in that talk becomes an organized social encounter comprised of the evaluation of the encounter, the interpretation of that encounter, and social identity (Goffman, 1964; Blumer, 1969). A PWS enters every communicative context with a history of these transactional experiences coloring the interaction at hand. Similarly, a normally fluent speaker (NFS) may also have had social interactions with a PWS that impact the current encounter. Each individual has built a *stuttering persona* out of those past experiences. Stuttering as a behavior is intimately linked to the *active relationship* between the speaker and the listener in a particular communicative context, and it is within that interactional moment that stuttering emerges (Goffman, 1963; Lemert, 1970; Acton & Hird, 2004).

Conversational analyses have shown that interactants are responding to each other's talk in an ordered way, observing rules of turn-taking, overlap, and getting cues from pauses and gestures (Sacks, et al., 1974; Schegloff, et al., 1977; ten Have, 2007). Furthermore, every social interaction involves real-time evaluation and interpretation as the interactants are signaling to each other how the flow of the encounter is progressing with verbal and non-verbal signals (Blumer, 1969; ten Have, 2007). Thus, a rule-ordered conversational encounter not only includes the talk itself, but also the ongoing interpretations and evaluations of that encounter by both parties. The interpretation and the evaluation of a particular communicative event can have a range of values for a PWS based on the variables of context, comfort, content, and who the other interactant is, all of which may be idiosyncratic in nature. These variables can create

real threats to the speech fluency of PWS during any communicative event (Goffman, 1963; Jones et al., 1984; Crocker et al., 1998; Yang et al., 2007; Shelton, Alegre & Son, 2010).

The primary situational threat for a PWS is referred to as *talk-in-interaction*, and examples of talk-in-interaction include conversations, interviews, reportage, depositions, or essentially any talk that involves two or more interactants. (Sacks et al., 1974). Typically, a PWS finds himself within the context of a primary situational threat whenever he is in a communicative interaction involving one or more normally fluent speakers, and 98-99% of individuals are normally fluent speakers (NFS). Variables within any form of talk-in-interaction, which for normally fluent speakers may be naturally occurring elements of any social interaction, can affect speech fluency in a PWS (Crocker et al., 1998). As the stuttering emerges during the interaction, in part as a reaction to these variables, a social identity of a PWS is created. Under these circumstances this identity is the polar opposite of the identity that the PWS wishes to present to the other interactant (Starkweather, 1987), which is that of a NFS. Therefore, a picture emerges of stuttering as a communication disorder that impacts the evaluation of the entire social interaction as well as constructing the social identity of the PWS by both parties.

Social Identity

The *psychological* identity of a person is not formed or re-formed with every social interaction (Blumer 1969). Every human being brings their psychological traits and characteristics into every social interaction, and the psychological traits and characteristics of each individual are not constructed anew with each social encounter. The social interaction, however, *is constructed* by the interactants as they frame, interpret and evaluate the action

comprising the encounter consistent, with the symbolic interactionist view of social interactions (Goffman, 1963; Blumer, 1969).

Identity is not a unitary construct, being comprised of social identity, personal identity, and ego identity (Goffman, 1963). All three are pertinent to the study of individuals who stutter. *Social* identity is the one constructed through social interaction and it is this identity which will be an important element in this discussion; *personal* identity allows for the consideration of the individual's idiosyncratic way in managing stuttering during the interaction; and *ego* identity allows for the consideration of what a PWS feels about stuttering and its management.

Individuals have a public identity that affects how they interact in social settings, implying that the social presentation of the self can and may differ from the private self (Goffman, 1963). This is certainly demonstrated in the daily life of a PWS, when the decision to stutter openly or attempt to conceal it, is actually more of a decision about social identity, than it is one about fluency. That is, in a conversational encounter with a NFS, a PWS who is attempting to conceal his stuttering makes that the focus of the interaction in order to present a social identity as a normally fluent speaker (Starkweather, 1987). Fluency is a desired outcome, but establishing and/or maintaining a social identity as a NFS is paramount, at least until he can integrate stuttering into his social identity through the process of self-acceptance. A therapeutic techniques that has commonly been viewed as a tool for facilitating self-acceptance in a PWS is self-disclosure, although it comes with social risks.

Disclosing the fact that one stutters during a communicative interaction places the PWS at risk for rejection, stereotyping, and stigmatization (Sheehan, 1970; Goffman, 1963; Woods & Williams, 1976; Turnbaugh, Guitar, & Hoffman, 1979; St. Louis & Lass, 1981; Van Riper, 1982; Ruscello, Lass & Brown, 1988; Ham, 1990; Bloodstein, 1995; Cooper & Cooper, 1996; Murphy,

1999); but attempts to avoid stuttering and remain free of these negative social responses puts added pressure on a PWS and creates different risks such as artificiality, convoluted discourse in order to avoid a particular feared sound or word which had been stuttered in the past. As a result, the communicative event can become disorienting and confusing for the listener, highlighting the aberrancy of the speech of the PWS, and drawing the listener's attention to the signal itself and not the content. This is paradoxical and contrary to the purpose of PWS who wish to present themselves as a NFS (Starkweather, 1987). Based on an encounter such as this, the listener can create a social fact about the PWS, for example, as inarticulate, confirming a socially held stereotype about PWS and the stigmatizing nature of stuttering itself.

The Stigmatizing Nature of Stuttering

The term *stigma* is defined as a “deeply discrediting” attribute or trait that marks an individual and reduces that person “from a whole and usual person to a tainted, discounted one” in the eyes of the other interactant (Goffman, 1963, p.3). The individual who possesses an attribute that is devalued by society at large faces public stigma, negative stereotyping, prejudicial treatment, and discrimination (Goffman, 1963; Boyle, 2012). Internalization of these negative societal attitudes and reactions may result in social isolation and deleterious psychosocial effects on the well-being of the PWS (Boyle, 2012).

The definition of stigma as a discrediting mark or attribute has remained stable since Goffman (1963) and its current conceptualization as a *dialectic, transactional process* between interactants in a social setting is now the prevailing characterization (Jones, Farina, Hastorf, Markus, Miller & Scott, 1984; Crocker et al., 1998; Yang et al., 2007; Shelton, Alegre, & Son, 2010) and conflates with the nature of stuttering as a speech disorder that emerges within specific communicative contexts and under idiosyncratic sociological conditions. It is within this

socio-communicative context that the stereotypes about PWS have been created and still persist.

There is a special relationship between a stigmatizing attribute and a negative stereotype (Goffman, 1963). The attribute of stuttering includes the stereotypes of shyness, anxiousness, fearfulness, reticence, nervousness, tense demeanor, guarded, sensitive, unintelligent, frustrated, guarded, and an introverted personality (Woods & Williams, 1976; Kalinowski, Stuart, & Armson, 1996; MacKinnon, Hall, & MacIntyre, 2007; Healey, 2010; Von Tiling, 2011). The negative stereotypes about PWS develop out of the inferences that a normally fluent speaker (NFS) makes about PWS during a communicative interaction, e.g., inferring that the PWS is anxious, or tense, or embarrassed, and then applies those traits to the personalities of PWS in general (White & Collins, 1984). These negative stereotypes about people who stutter can also form when listeners have negative reactions to a communication partner who stutters (Woods & Williams, 1976; Turnbaugh, Guitar, & Hoffman, 1979; St. Louis & Lass, 1981; Ruscello, Lass & Brown, 1988; Ham, 1990; Cooper & Cooper, 1996; Healey, 2010). These stereotypes about PWS hold across various social groups, e.g., teachers, lay people, and health care workers (Boyle, 2013). These stereotypes even exist in film (*A Fish Called Wanda*) and TV (*Porky Pig*) lending support to and mirroring societal thinking about PWS, who can be aware of these stereotypes (Boyle, 2013).

During any communicative interaction, there is an opportunity for the non-stigmatized interactant to judge and stereotype the stigmatized individual and in the case of PWS this can be a NFS or another PWS (Goffman, 1963; Van Riper, 1982; Blood, Blood, Tellis & Gabel, 2003; Boyle, 2013). This makes the decision to self-disclose and/or to stutter freely a very difficult one for a PWS. They risk being rejected and judged as listeners attach stereotypes to them as they speak, and their stuttering can increase if they feel discomfort, rejection, judgment, or inferior

during the social interaction (Bloodstein & Bernstein Ratner, 2008). A PWS faces public stigma when he discloses his stuttering in a social interaction because it is a visible, devaluing attribute.

Stuttering meets the criteria of a stigmatizing attribute because: it connects an attribute to stereotypes about PWS; stuttering as a social stigma is a constructed phenomenon through the interaction with others; it can affect an individual's social interactions with NFS and/or other stigmatized individuals in the same group; and it devalues the social identity of the stigmatized individual (Goffman, 1963; Jones et al., 1984; Boyle, 2013). Boyle (2013) found that 40% of PWS concurred with the negative stereotypes associated with the attribute of stuttering, reflecting an internalization of the public stigmatization of stuttering, leading to self-stigmatization. Self-stigmatization, in turn, may have negative effects on the communicative interaction on both the social level and the verbal level. Working with the PWS to reduce self-stigmatization through self-disclosure can provide relief and comfort during communicative interactions, without supporting evidence from the literature that self-disclosure has this intended effect.

It is impossible to conceal some stigmatizing attributes and possible to conceal others. Examples of visible, non-concealable stigmas include individuals with significant scarring from burns, a blind person, or a child with a craniofacial anomaly. These individuals are *discredited* meaning they are instantly identifiable due to the visibility of their stigma (Goffman, 1963). Conversely, an individual with a stigmatizing attribute that is concealable, but has the potential to be visible, is referred to as *discreditable* (Goffman, 1963). Although stuttering is referred to in the literature as a visible stigma (Goffman, 1963; Van Riper, 1982; Boyle, 2013), suggesting that PWS are immediately discredited, its true nature can be more accurately defined as *fluid* or *dynamic* in relation to its visibility to other interactants. For example, a NFS who is not familiar with his communicative partner as a PWS is surprised when his anticipated identity as a NFS does not match his actual identity as a PWS. The PWS begins the interaction in a discreditable

state (concealed) until he begins to speak, at which time he becomes discredited, and the tension, the discomfort, and the opportunities for judgment and stereotyping arise. On the other hand, for the NFS who knows that his communication partner is a PWS, there is no mismatch in identities, i.e., he is discredited at the outset of the interaction, and this reduces the probability of negative reactions on the part of the NFS (Collins & Blood, 1990; Healey et al., 2007; Healey, 2010; Lee & Manning, 2010). From the perspective of a PWS, he is instantly discredited if he is stuttering freely during the communicative interaction; or he can remain discreditable if his stigma is not visible due to silence, or due to expert abilities at concealment through avoidance strategies, which is a common tendency among a subset of people who stutter, who are referred to as being *covert* stutterers.

Therefore, it is apparent that a PWS has a choice in any communicative interaction. Speech-language pathologists prefer that the individual discloses his stuttering, i.e., becomes discredited; however, a PWS who understands the social risks associated with self-disclosure, and hopes to preserve a social identity as a normally fluent speaker, may make attempts to avoid stuttering. Conversely, it is possible that a PWS can pass as fluent as long as they remain concealed, and concealing their stuttering may be a natural response to avoid rejection or stereotyping (Sheehan, 1970; Van Riper, 1982; Bloodstein, 1995; Murphy, 1999). As a consequence, people who stutter can be in *either* state before or during a social interaction and can move from concealed to disclosed (Goffman's *discreditable* to *discredited*) as their attempts to conceal their stuttering from others fails. This can cause feelings of great discomfort, tension, and anxiety during the interaction, as well as anger, guilt, shame, feelings of helplessness, feelings of suffering, and stigma as affective reactions to his stuttering (Van Riper, 1982; Corcoran and Stewart, 1998; Murphy, 1999; Daniels & Gabel, 2004).

When a stigmatized individual is interacting with a non-stigmatized individual, it is referred to as a *mixed situation* (Goffman, 1963). Mixed situations challenge both PWS and a non-stuttering interactant due to the potential development of discomfort and tension. This happens for a few reasons. First, the disclosed PWS is not always certain that the other interactant will truly accept him and this uncertainty can produce discomfort during the interaction. Second, the concealed PWS must *manage information* about his stigma and this can be taxing and produce tension for a PWS. Deciding whether to remain concealed or to disclose; to lie or not to lie; to avoid words or specific sounds; to decide when it is best to disclose, with whom and how, comprise the information that must be managed by the PWS in the social context. As a consequence, the PWS then begins to *partition* his life into *forbidden*, *civil* and *back* places (Goffman, 1963) and people who stutter are very familiar with the partitioning of their social space. *Forbidden places/settings* are defined as places where exposure will result in expulsion from that particular social setting. This seems a bit extreme in relation to a PWS and, although possible, would probably not occur in social setting in contemporary American society; however, PWS may consider certain careers or employment opportunities as forbidden places, e.g., air traffic controller, sales positions, etc. *Civil places/settings* are defined as those places where the stigmatized individual is accepted, although some discomfort lingers, and this is probably the norm in today's society. *Back places/settings* are defined as those where the stigmatized individual can be himself and stutter freely. Thus, a PWS partitions his social world based on the comfort of the social context (Goffman, 1963; Panchakis, 2007; Ragins, 2008) and must decide on the information that they will offer about their actual, social identity, i.e., to be discredited (disclosed) or to remain discreditable (concealed) in a social interaction. The majority of communicative interactions for a PWS are mixed situations and most likely in civil places and/or back places, suggesting that

choosing to stutter freely comes with less negative consequences. The value of self-disclosure from the perspective of the PWS, however, has not been studied.

It is not surprising that a PWS would choose to avoid stuttering and thus make attempts to remain concealed during the communicative event in order to avoid the social stigma associated with the attribute of stuttering. It is also not surprising that after years of experiencing publicly held negative feelings and attitudes towards their stuttering that a PWS develops social personae built on the many negative social interactions they have engaged in (Acton & Hird, 2004). Through these interactions with a PWS, the communication partner also takes a mental measure of the PWS, and he constructs a social identity for the PWS based on that accounting. The social identity of a PWS is thus interactionally defined and constructed as the interactants build social facts about each other and these facts inform and are informed by the social encounter.

Since an individual's social identity is constructed by interactions with others (Goffman, 1963; Lemert, 1970; Sheehan, 1970; Sarbin & Kitsuse, 1994; Hagstrom & Daniels, 2004) it is not unitary and unchanging but is dynamic based on these varied interactions (Sarbin & Scheibe, 1983; Crocker et al., 1998; Sarbin, 2000; Hagstrom & Daniels (2004). It is important to note that the communication milieu for PWS is quite varied across the social spectrum and the social identity that emerges through these interactions is impacted by many factors, including the decision to self-disclose or remain concealed as a PWS. Therefore, the pressure to maintain the social identity of a PWS has a high value for a PWS because disclosure of their actual identity as a PWS could mean negative stereotyping, rejection, and discomfort for both interactants (Goffman, 1963). This has therapeutic significance because speech-language pathologists encourage a PWS to self-disclose in order to achieve self-acceptance and integrate their

stuttering into their identity instead of attempting to avoid and/or conceal it. A closer look at self-disclosure is warranted.

Self-disclosure

Self-disclosure is considered a process on a continuum that involves revealing personal information about oneself to another (Jourard, 1964; Chelune, 1987; Derlega, Metts, Petronio, & Margulis, 1993; Ragins, 2008) and is commonly used by psychotherapists and counselors in treatment with individuals who are stigmatized due to physical, social, psychological, ethnic, and/or socioeconomic factors (Ryan, Kempner, & Emlen, 1980; Westbrook, Bauman, & Shinnar, 1992; Panchakis, 2007; Ragins, 2008; Charmaz, 2010; Poindexter & Shippy, 2010). Evidence from other stigmatized populations, e.g., people living with HIV/AIDS, sexual minorities, people of lower socioeconomic status, and people from ethnic backgrounds different from the majority, indicate that the benefits of self-disclosure are numerous. These include an increase in self-esteem, more positive self-evaluation, an increase in self-efficacy, and a reduction in the cognitive effort necessary to remain concealed in order to avoid public stigma (Derlega et al., 1993; Panchakis, 2007). Furthermore, the individual who discloses experiences a sense of relief, closer personal relationships, reduced stress, and has the opportunity to affiliate with other people like him, something that is precluded if one remains concealed (Ragins, 2008). Self-disclosure also fosters authenticity in that concealing an aspect of the self is no longer necessary (Ragins, 2008). Thus, for a PWS self-disclosure can be beneficial in reducing the stress and tension associated with a communicative interaction, as well as permitting them to affiliate with other people who stutter by joining self-help groups, and to be more authentic and natural during communicative interactions with others.

Encouraging self-disclosure is a common therapeutic technique employed by most speech-language pathologists who work with people who stutter. There is anecdotal evidence that a PWS can use humor, sarcasm, self-deprecating comments, or be very direct as methods for disclosure (Van Riper, 1982); however the data on the benefits of self-disclosure from the perspective of PWS is not noted in the literature. There is, however, evidence from the perspective of the listener that self-disclosure is helpful during a communication event. The studies on the listener's reactions to PWS who self-disclose are moderately substantial and describe benefits to the listener (Rosenberg & Curtiss, 1954; Collins & Blood, 1990; Manning, Burlison, & Thaxton, 1999; Blood, Blood, Tellis, & Gabel, 2003; Healey, Gabel, Daniels, & Kawai, 2007; Healey, 2010; Lee & Manning, 2010). For example, a) listeners prefer speakers who self-disclose over those who do not (Collins & Blood, 1990; Healey et al., 2007; Healey, 2010; Lee & Manning, 2010); b) listeners respond more favorably to speakers who self-disclose than to speakers who employ stuttering modification techniques (Manning et al., 1999; Healey, 2010; Lee & Manning, 2010); c) listeners perceived speakers who self-disclose as more friendly (Healey et al., 2007); d) disclosure is best done by the PWS at the outset of the communicative event (Healey et al, 2007) as opposed to waiting until the end of the interaction; and e) listeners perceive self-disclosure more positively if the speaker's stuttering was more severe (Collins & Blood, 1990; Lee & Manning, 2010). Since the benefits of self-disclosure from the perspective of the PWS have not been studied, there is an unbalanced picture of its value since the data that does exist is from the perspective of the listener.

It is generally accepted that encouraging a PWS to self-disclose can increase self-acceptance by reducing feelings associated with stigmatization and negative attitudes toward stuttering; by increasing comfort during the communicative encounter; and by reducing the heightened sensitivity to his stuttering, he may stutter more freely facilitating a feeling of

authenticity and naturalness (Goffman, 1963; Sheehan, 1970; Van Riper, 1983; Collins & Blood, 1990; Healey et al., 2007; Healey, 2010; Guitar & Peters, 2013). The degree of cognitive effort and anxiety during a communicative interaction are taken as representations of speech naturalness since self-monitoring of speech output (cognitive effort), the anxiety associated with concealing when communicating in a mixed situation, and vigilance are characteristic comments from PWS regarding their verbal interactions with NFS. People who do not stutter use very little effort when speaking and since they are not hyper-vigilant about their speech, it has a character of naturalness (Guntupalli et al., 2006, p.11). Cognitive effort and anxiety during a communicative interaction are studied as speech naturalness in the fluency literature and using speech naturalness as an outcome measure post-therapeutically in PWS has a long history in the literature but it is mostly from the perspective of the listener (Martin, Haroldson, and Treden, 1984; Ingham, Gow, & Costello, 1985; Ingham, Ingham, Onslow, & Finn, 1989; Finn & Ingham, 1994; Armson & Kiefe, 2008; Teshima, Langevin, Hagler, & Kully, 2010). Although speech naturalness is not a variable in this investigation, the two constructs of cognitive effort and anxiety can be examined separately. A cognitive effort question captures the “scan-ahead” strategy, i.e., continual self-monitoring and constant vigilance to speaking that is common in people who stutter when they are interacting with other speakers (Guntupalli, Kalinowski, & Saltuklaroglu, 2006), but is not typical of normally fluent speakers under conversational conditions. The question of how the PWS perceives the cognitive effort expended during speaking as a function of disclosure has not been addressed in the literature. The anxiety question is intended to address this affectual factor under each condition from the perspective of the PWS, which has not been studied. The *effects* of self-disclosure in a communicative interaction on comfort, cognitive effort, anxiety, and fluency have not been systematically studied from the perspective of the PWS.

Regardless of how a speaker self-discloses, by revealing his stuttering a PWS can reduce or even eliminate the fear of stuttering, which in turn can reduce or eliminate avoidance behaviors. Decreased avoidance produces a reduction in handicap and this in turn can lead to a slight decrease in stuttering frequency (Manning, 2010). Even though increased verbal fluency is not a direct goal of self-disclosure, it can be a secondary effect due to a reduction in tension and fear during the communicative event. Furthermore, the idea that a PWS interferes with the flow of speech because of his fearful anticipation of stuttering has a history in stuttering research (Bloodstein, 1972; Sheehan, 1970; Van Riper, 1982) where the generally understood tenet is that stuttering is what happens when a PWS attempts to prevent stuttering. Therefore, removing the internal obstacles of fear, tension, and anticipatory struggle through self-disclosure may produce a concomitant increase in verbal fluency, as well as the more direct goal of self-acceptance.

Purpose of this Study

Part of a common treatment paradigm for PWS is to facilitate an integration of stuttering into their personal and social identities by encouraging them to acknowledge and disclose publicly that they stutter. The assumption is that as the anxiety, fear, tension, and discomfort associated with the stigma of stuttering as well as avoidance behaviors are reduced, their communication experience will become more authentically representative of their actual identity, as well as more comfortable and natural. The effects of disclosing the stigma of stuttering on the communicative interaction of adults who stutter in conversation with NFS has not been systematically studied. This study proposes to investigate the (a) role that disclosure status has on the communicative interaction of PWS, from the perspective of PWS; and (b) the benefit they receive from disclosing their stuttering to a communication partner. In order to obtain information about the communicative interaction and the benefits of self-disclosure from

the perspective of the participant, a questionnaire was developed to address the perception of stuttering severity, comfort, speech naturalness, and benefit of self-disclosure from the perspective of the PWS. The relationship between level of stigma and perceived benefit of self-disclosure will also be investigated. The research questions are:

1. Does self-disclosure have an effect on the participant's self-perception of stuttering severity (SPSS), comfort (COM), cognitive effort (COGE), anxiety (ANX), and benefit (BEN) during the communicative interaction?
2. Does self-disclosure have an effect on the total syllables produced, percent syllables stuttered, and total word count during the communicative interaction?
3. Is level of overall self-stigma associated with self-perception of stuttering severity, comfort level, cognitive effort, anxiety level, and perception of benefit to disclosure?
4. Does level of overall self- stigma have an effect on total syllables produced, percent syllables stuttered, and/or total word count in the disclosed and non-disclosed conditions?

CHAPTER 3

METHODS

Participants and Setting

The study was approved by the Internal Review Boards of Temple University and La Salle University. Twenty-eight participants were recruited, however only twenty five participants were included in the study (see APPENDIX A for demographic information). All of the participants signed informed consent forms to participate in the study (see APPENDIX B). Selection criteria for participants included male and female adults $\geq$ the age of 18 with a stuttering onset during childhood or adolescence of varying levels of severity and who self-identified as a person who stutters (Amster, 1995; Brocklehurst, Drake & Corley, 2015). Those who received treatment for their stuttering in the past or were currently receiving therapy were acceptable participants, as well as members of a self-help group at the time of the study or in the past. The ages of the participants included in the study ranged from 18 to 73 years, with a mean age of 40.4 years. There were 16 males and 9 females. Two participants were enrolled in a therapy program for stuttering at the time of the study, 18 had therapy at some point in the past, 3 were currently enrolled in therapy and have had therapy in the past, and 2 have had no therapy for their stuttering at all. Self-help group experience (SHGE) was also noted among the participants. The breakdown was 5 participants were currently enrolled in a SHGE, 7 had a SHGE in the past, 9 had no SHGE, and 4 were currently enrolled in a SHG and also participated in a SHG in the past. Participants included in the study reported no history of hearing impairment, or neurological impairment that could affect speech production, or cognitive-linguistic functions.

The data for two participants who were recruited for the study could not be used. In one case, the participant's limited English proficiency would have interfered with transcription;

in the second case, there was a technological problem preventing video recording for Condition 2. A third participant was recruited but did not show up at the appointed time and never contacted the investigator. Therefore, 25/28 recruited participants were included in the study.

An a priori power analysis indicated an N of 34 would be adequate for a medium effect size of .50, $p \leq .05$. It should be noted that in a search of the literature there were 2 studies reported from the *Journal of Fluency Disorders*, Volumes 41-47 (2014-2016), with an $N \geq 15$; there was one study reported in *JSLHR* between 2014 and 2016 that had an $N \geq 15$; and there was one study reported in *AJSLP* with an $N \geq 15$ between 2008 and 2015. In support of the mean for this study, a search of the literature for experimental studies between the years 2010 and 2015 yielded 10 studies with ≤ 20 participants ($M = 12$) and none with > 20 participants.

Participants were recruited from the La Salle University Speech-Language Hearing Clinic records, Temple University Speech-Language Hearing Clinic records, self-help groups associated with the National Stuttering Association (NSA) in Philadelphia, New Jersey, and Delaware, through contacts with ASHA Board Certified Specialists in Fluency, Craigslist postings, and through social media. The investigator developed a research website which provided potential participants with a description of the study including a way to contact the investigator without revealing any personal information. A CV of the investigator was also posted on that site. Once a participant contacted the investigator expressing interest in being enrolled in the study, he/she was contacted via email or telephone, based on their preference, and an intake interview was conducted using the *Participant History Form*.

At the time of the interview, the investigator described the study to the potential participant as an experimental task that involves a map and a communication partner, who was a student in the Department of Communication Sciences and Disorders at La Salle University, where the study was conducted. If the participant asked if the study was related to his/her

stuttering, the investigator explained that it does in that he must speak to a communication partner in order to complete the task. The investigator explained the experimental protocol, the experimental task, the test measures, and the use of the questionnaire, without offering any details about the type of questions that would be asked to prevent any priming of the participant.

Participants and normally fluent interactants were counterbalanced and the order of each experimental condition (Disclosed and Non-Disclosed) was also counterbalanced. The study was conducted in a treatment room of the La Salle University Speech-Language-Hearing Community Clinics (LSU-SLHCC) that was arranged so that optimal audio and video would be obtained. For the experimental task, the participant and the communication partner were separated by a screen so that they could only see each other over the barrier if necessary. Their hands or the material necessary for the experimental task were not mutually visible (see Figure 1.)

Figure 1. The Experimental Setting

The room used for the study was equipped with a USB Pan/Tilt/Zoom camera and a USB microphone. Each room is connected to a dedicated PC located in the observation room via USB

extender over category 5e cabling. Audio is captured using a CAD Audio u7 USB condenser Boundary Mic. Video is captured using a PTZ Logitech QuickCam Orbit MP Webcam. Audio and video is transmitted to a PC located in a dedicated observation room using Extron Extender Plus USB extender pairs. The recording software used is Logitech Webcam Software. The video was saved to the main frame computer within the observation room and then downloaded to an encrypted hard drive for editing. Only the investigator had the password to the encrypted hard drive.

Materials

The *Self-Stigma of Stuttering Scale (4S)* (Boyle, 2012) was developed to evaluate the level of self-stigma in a PWS, based on the responses of 291 PWS. The participant's scale, however, was entitled *The Self-Perceptions of Stuttering Scale*, in order to avoid prejudicing the participant's responses regarding stigmatization, but all of the items were the same as the 4S. The scale was designed for use as a research and therapeutic tool which not only provides an objective measure of self-stigma, but can also be used to document therapeutic change over the course of therapy. Self-stigma is comprised of three elements: stigma awareness, stereotype agreement, and stigma self-concurrence. The 4S was selected as a measure of self-stigma for this study because of its reliability and validity for assessing stigma in PWS. Multiple regression analyses supported the notion that self-stigma is a "multilevel and progressive construct" (Boyle, 2013, p. 1523) with stronger correlations noted between self-concurrence and self-esteem and less strong correlations between stigma awareness and self-esteem. Internal consistency was assessed and co-efficient α measures were all between .70 and .89. Temporal stability was tested via test-retest correlations between questionnaires sent out 2 weeks after the initial questionnaire was answered. The test-retest correlations for the overall 4S were .80.

Construct validity was evaluated by analyzing relationships between self-esteem, self-efficacy, and life satisfaction and stigma awareness, self-efficacy, and life satisfaction.

The 4S consists of 33 statements arranged in two general categories: 14 statements reflecting public stigma about PWS and 19 statements reflecting the self-stigma of the respondent. The 14 statements related to public stigma measure whether the PWS respondent agrees with a specific statement reflecting the public's ideas about a PWS. An example of statements reflecting public stigma are, "Most people in the general public believe that people who stutter are insecure/self-confident/friendly/capable/outgoing/mentally healthy." Each statement is completed by one of those terms and the statement is then rated by the PWS. The 19 statements related to self-stigma are more personally framed and include statements about the occupational effects of being a PWS, personality traits, and agreement with typically held social stereotypes of PWS. An example of statements reflecting self-stigma is, "I believe that people who stutter are generally nervous, self-confident, capable, incompetent, insecure, outgoing, shy." Each statement is completed by one of those terms and the statement is then rated by the PWS. All 33 statements are rated on a 5 point Likert Scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. An individual's responses were averaged, yielding a 4S score between 1 and 5. According to Boyle (2013) a mean 4S score of 3-5 indicates higher levels of overall self-stigma, and a mean score below 3 indicated low levels of overall self-stigma.

The Stuttering Severity Instrument--4th edition (SSI-4)(Riley, 2009) is a commonly used instrument for evaluating the core features of stuttering as well as secondary behaviors during conversation and on an oral reading task. The test yields a numeric score related to level of severity. Intrajudge reliability (self-agreement) of frequency and duration of stuttered speech

observed in videotaped samples had a mean of 87.1% for frequency of stuttering, with a range of 71.4% - 92.9%; and for duration of the three longest stuttering events in the sample, the mean was 85.9% with a range of 68.0% - 100. Interjudge reliability between experienced or trained examiners and research team members for frequency had a mean of 91.0% with a range from 81.0% - 100; for duration of the three-longest stuttering events in the sample, the mean obtained was 84.8% with a range from 58.1% to 87.2%; for physical concomitants, i.e., secondary behaviors associated with a stuttering event, the mean obtained was 82.9% with a range from 82.2% to 99.5%.

Two types of validity were measured: criterion-prediction validity and construct-identification validity. The *SSI-4* was compared to the typical frequency measure (percentage of stuttered syllables or words) and the correlation of the *SSI-4* total score to the frequency score for adults was $r = .741$, $p < .01$. This was used as a measure of criterion-prediction validity. The author considered the parameters of frequency, duration, and physical concomitants as parameters of stuttering that are consistent with the behavioral model of stuttering. The construct-identification validity correlational analysis indicated that the parameter scores to the total *SSI-4* score had a mean of .76, $p < .01$ and the author concluded that the *SSI-4* has statistical validity as a measure of stuttering.

Level of severity was not a variable in this study so obtaining a severity score based on the participant's speech and reading was not relevant to the research questions. The *SSI-4* was used solely for the purpose of obtaining a reading sample of 369 syllables (Plate XIII) for analysis. This passage was chosen because it was long enough to obtain an adequate reading sample, while keeping time limitations and the participant's comfort in mind.

Self-Report Questionnaire

As a disorder with strong sociological and interactional elements, self-report provides the investigator with opportunities to obtain subjective and experiential information that is not restricted to strict testing conditions in the clinical setting (Guntupalli, Kalinowski, & Saltuklaroglu (2006). A self-report questionnaire was developed to obtain information from the perspective of the PWS on self-perception of stuttering severity, comfort, anxiety, cognitive effort, and benefit of self-disclosure. A Likert scale for each question was formulated based on models found in the stuttering literature. The five-question scale reflected either the disclosed (Dc) or non-disclosed (NDc) condition by varying the wording (see APPENDIX C). The scale is described in the next section with an example for each variable.

Self-Perception of Stuttering Severity (SPSS)

There is support in the literature for the use of self-rating scales with PWS (Naylor, 1953; Aron, 1967; O'Brian, Packman, & Onslow, 2004; Guntupalli et al., 2006) and it is currently viewed as a valuable addition to traditional objective measures of stuttering severity, e.g., frequency counts (Boberg & Kully, 1994; Ingham & Cordes, 1997). Self-reporting from a PWS is a valuable method for capturing the experiential nature of the disorder which cannot captured by frequency counts and test scores alone (Guntupalli, Kalinowski, & Saltuklaroglu, 2006). O'Brian, Packman, & Onslow (2004) adapted the *Self-Perception of Stuttering Severity* scale from the 9-point *Speaker Naturalness Scale* (Martin, Haroldson, & Triden, 1984). They found that there was 80% agreement within one point of their scores between the self-ratings of PWS and the speech-language pathologist who also rated the speakers' taped sample in six different social contexts. The questions to the participant in the non-disclosed condition (NDc) and disclosed condition (Dc) are below with the accompanying Likert Scale ratings:

(NDc) *How would you rate your stuttering while you were talking to your communication partner throughout the map task?*

(Dc) *How would you rate your stuttering while you were talking to your communication partner throughout the map task after you told them that you were a person who stutters?*

1 2 3 4 5 6 7 8 9

Extremely severe stuttering

Very fluent for me

Comfort (COM)

A question was developed to capture the level of comfort within the communicative event from the perspective of the PWS. The scale was adapted for the speaker from a listener comfort scale (O'Brian, Packman, Onslow, Cream & Brian, 2003).

The questions presented to the participant were:

(NDc) *How comfortable were you talking with your communication partner?*

(Dc) *How comfortable were you talking with your communication partner after you told them that you were a person who stutters*

1 2 3 4 5 6 7 8 9

Not at all comfortable

Extremely comfortable

Cognitive Effort (COGE)

The cognitive effort question captures the “scan-ahead” strategy, i.e., continual self-monitoring and constant vigilance to speaking that is common in PWS when they are interacting with other speakers (Guntupalli, Kalinowski, & Saltuklaroglu, 2006), but is not typical of normally fluent speakers under conversational conditions. The question of how the PWS perceives the cognitive effort expended during speaking as a function of disclosure has not been addressed in the literature.

(NDc) *How much were you thinking about your speech while you were talking with your communication partner during the map task?*

(Dc) *How much were you thinking about your speech while you were talking with your communication partner during the map task after you disclosed your stuttering?*

1	2	3	4	5	6	7	8	9
<i>A great deal</i>								<i>Not at all</i>

Anxiety (ANX)

The anxiety question is intended to address this affectual factor under each condition from the perspective of the PWS, which has not been systematically studied under these conditions. The question was developed from a category in Finn & Ingham (1994).

(NDc) *How anxious were you while you were talking with your communication partner during the map task?*

(Dc) *How anxious were you while you were talking with your communication partner during the map task after you disclosed your stuttering?*

1	2	3	4	5	6	7	8	9
<i>Extremely anxious</i>								<i>Not anxious at all</i>

Benefit of Disclosure (BEN)

A question was developed using the model of O'Brian et al. (2003) to capture whether there was a benefit to self-disclosure or non-disclosure from the perspective of the PWS.

(NDc) *Do you feel that there was any benefit to not disclosing that you are a person who stutters to your communication partner at the outset of the Map Task?*

(Dc) *Do you feel that there was any benefit to disclosing that you are a person who stutters to your communication partner at the outset of the Map Task?*

1 2 3 4 5 6 7 8 9

No benefit

A significant benefit

Procedures

Training Protocol for the Normally Fluent Speaker (NFS)

Five normally fluent speakers (NFS), all females, were selected to be trained as communication partners during the experimental task from the first-year graduate class in CSD at La Salle University, as well as one CSD female staff member. Three of the normally fluent speakers were also used to conduct the hearing screening, so that over the course of the experiment each participant encountered two normally fluent speakers one of whom also acted as the hearing screener. The investigator explained the Information Giver's (IG) maps and the Information Follower's (IF) maps (see APPENDIX D) to the trainees. The investigator described the Map Task to the trainees, emphasizing the fact that they are only to introduce themselves to the participant without any further conversation until the map task began. The investigator instructed the trainees that they are to answer only questions related to the Map Task during the experiment. If the participant asks if the task is related to his/her stuttering, the response is that the task is related to communicative exchanges between people who stutter and people who do not stutter.

The investigator engaged in the Map Task with each trainee, once as the IG and once as the IF, and then the roles were reversed. Each trainee then engaged in the Map Task with another trainee, following the same protocol as the investigator used with each of them. The training was videotaped for review in order to determine if the trainees understood the Map

Task and were able to implement the experimental protocol. The investigator determined when they were adequately trained by evaluating how closely they adhered to the instructions given by the investigator. If they engaged in any talk beyond the initial introduction, or engaged in any talk beyond what was required by the actual Map Task then they engaged in the task again with the investigator. The process was repeated until each trainee demonstrated the ability to execute the protocol without error. After an evaluation of the videotaped sessions, all of the trainees were errorless after the training with the investigator and one trial with another trainee.

Training Protocol for Transcribers

Two transcribers were trained in order to ensure the reliability of their measurement for each participant of the total syllables during the Map Task, total words spoken during the Map Task, the percentage of syllables stuttered during the Map Task, and the percentage of syllables stuttered during the oral reading portion of the experiment. There are various methods documented in the literature, but the two most common are the *Stuttering Measurement System* (SMS) (Ingham, Bakker, Ingham, Kilgo, & Moglia, 1999); and the *Stuttering Measurement Assessment and Training* (SMAAT) (Ingham, Cordes, Kilgo, & Moglia, 1998). The SMS program proved to be a more reliable method for insuring accurate measurement post-training when compared to the SMAAT and the control group who received no training (Bainbridge, Stavros, Ebrahimian, Wang, Ingham, 2015). The SMS requires the rater to view a 1-3 minute audio-visual recording of children and adults who stutter and then their type/token stuttering event counts are compared to the original judge(s).

The training procedures for this study were based on the SMS methodology noted above, but expanded by using longer time segments of stuttered speech and the number of

sampled speakers. The videos of two adolescent and four adult persons who stuttered were selected for training purposes from clients enrolled in treatment in the La Salle University Speech-Language-Hearing Community Clinics (LSU-SLHCC). All clients enrolled in treatment sign audio/visual release forms allowing their videotaped sessions to be used for educational and research purposes. Only four of the six selected were transcribed, three adult males and one female, two being used to introduce the transcribers to the features of stuttered speech. During these two videos, the investigator reviewed the types of disfluencies and possible secondary behaviors that the transcribers may witness and demonstrated each one. The transcribers viewed those two same videos together. The training protocol included having each transcriber then view four five-minute segments of people who stutter engaged in therapy with a graduate student clinician in the La Salle University Speech-Language-Hearing Clinic. They then viewed the four videos selected for analysis separately, and their instructions were to count the total number of words, the total number of syllables, and then calculate the percent syllables stuttered. The percentage of syllables stuttered was calculated by using the following formula: $\text{stuttering events} \div \text{total number of syllables} \times 100$. They also were required to obtain type/token fluency counts from the sample. A transcript was considered reliable if there is a 70-80% match between transcriber transcripts. For the training, only the total number of syllables and the percentage of syllables stuttered were compared between transcribers. The inter-rater agreement between the transcriber trainees for Total Syllables was very high (Cronbach $\alpha = .997$) as was the agreement for Percent Syllables Stuttered (Cronbach $\alpha = .981$) indicating that the training protocol was effective for transcription purposes.

Participant Protocol

The investigator explained the experimental protocol to the participant as part of the Informed Consent procedures, allowing for questions as needed. Once the Informed Consent documents were signed, the investigator provided the participant with *The Stuttering Self-Perceptions Scale* (Boyle, 2012), the participant's version of the *Self-Stigma of Stuttering Scale (4S)*, explaining how to use the scale to respond to the 33 items. The investigator left the room to allow for completion of the form in private. The investigator re-entered the room, and collected the 4S. The investigator then informed the participant that he will be reading aloud a selected passage from the *SSI-4*. After the completion of the oral reading task, the investigator explained that the first communication partner would be coming in to work jointly on a map task. Depending on the condition, the investigator instructed the participant to disclose the fact that he/she is a stutterer (Disclosed Condition) or not to disclose that fact (Non-Disclosed Condition), after they introduce themselves to each other. The first communication partner (NFS #1) entered the room and after mutual introductions, the participant either disclosed or did not disclose their stuttering depending on the experimental condition.

The participant and NFS #1 engaged in the experimental task (see *Experiment* section below for a detailed explanation of the Map Task) to its completion, at which time the NFS #1 left the room. The investigator entered the room and provided the participant with the Self-Report Questionnaire for the specific experimental condition, NDc or Dc. The investigator left the room to allow the participant to complete the questionnaire in private.

The participant was taken for a hearing screening which acted as a distractor as well as giving the participant an opportunity to reduce their focus on the experimental task. After the hearing screening was completed, the participant was taken back to the experimental space by

the hearing screener and informed that the second task will begin. The investigator reviewed the instructions on completing the experimental task and instructed the participant to disclose/not disclose that he/she is a PWS after mutual introductions, depending on the counterbalanced protocol. The second communication partner (NFS #2) entered the room and the participant will either disclose or not disclose that he/she is a PWS, depending on the experimental condition. Using the second set of experimental stimuli, which differed in icons and configuration in order to limit the effects of familiarity on the part of the PWS, both participants engaged in the second task to its completion, at which time the NFS #2 left the room. The investigator entered the room and provided the participant with the Self-Report Questionnaire for the second time, based on the condition just experienced. After each participant completed their second condition and questionnaire, the investigator entered the room, conducted a de-briefing per the Informed Consent protocol, and concluded the experiment.

Experiment

The experimental stimuli used in this study were two sets of maps (see APPENDIX C), adapted from the Map Task (Brown, Anderson, Yule & Shillcock, 1983; Anderson et al., 1984; Andrews et al., 1991). The original maps can be seen in Figure 2. The Map Task was originally designed to study language use in children as it occurs in its natural unscripted context. It was described as a “cooperative task” that does not involve “long turns”, but forces the participants to transfer information under stress due to interruptions in the shorter turns (Anderson et al., 1984). If the participant successfully completed the task, then the communicative interaction was considered successful (Anderson et al., 1991). This task required that one speaker acted as the Instruction Giver (IG) and one the Instruction Follower (IF) and this method was also used in

this investigation, however the PWS always acted as the IG and the NFS always acted as the IF. This was done in order to ensure that the PWS had to initiate the conversation and lead, through questions and answers, the NFS to the end of the map. The demands of initiating conversation, which is a requirement at some point in any social interaction, places a PWS at risk for increased dysfluency (Starkweather, 1987; Bloodstein & Ratner, 2008). The IG map and the IF map in Set 1 and the IG map and the IF map in Set 2 share landmarks and general configuration, but they are never the exactly the same. This requires questioning, clarification, and general conversational elements such as overlap and pausing to occur between the participant and the NFS. The participant was instructed to “get your communication partner to the end of the trail, using the landmarks, and staying on the trail.” The participant was also told that their maps “may be the same, or may not be the same, in terms of landmarks”. The NFS always knew that the maps were different but did not know which set was in use. The maps were marked IG1, IF1 and IG2, IF2.

The IG and the IF did not have the same identical map in that the landmarks on each map were different or arranged differently on the map itself. For example, there may have been a barn on each map, but they may not have been in the same location on both maps; or one map would have a barn but the other would not. The goal of the Map Task was for the IG to direct the IF to the end point of the map. There is a well-marked START and FINISH on each map. For a PWS this task required more openings, i.e., initiation of talk, which is the primary locus of stuttering moments (Starkweather, 1987; Bloodstein & Ratner, 2008). It also created an opportunity for a natural dialogue to occur as questions are asked and answered by both parties. Furthermore, the communicative pressure inherent in this type of task can be challenging for PWS since it mimicked real-life talk-in-interaction, e.g., interviews, responding to questions posed by professionals like lawyers and physicians, teacher-student interactions, etc.

It is true that this task did not fully capture a free-flowing conversation, however, it is unscripted and without time constraints, similar to conversation and challenges a PWS with possible overlapping turns, interruptions, and requests. Furthermore, in a conversational dyad, a PWS can choose to avoid stuttering by speaking less, using circumlocution, substituting words, or even being silent. Therefore, using a conversational format without constraining factors would not be ideal for studying the benefits of disclosure, since the PWS may be able to use those strategies of concealment. Avoiding talk and/or remaining silent was not an option during the Map Task because in order to be successful, both participants had to communicate verbally across turns by asking questions, requesting clarifications, asking for repetitions, etc., using only the verbal modality.

Each subject was studied under two conditions: the Disclosed Condition (Dc), in which the participant revealed that he is a PWS at the outset of the Map Task after introducing himself; and the Non-Disclosed (Dd) in which the PWS did not reveal that he is a PWS to the NFS after their introductions.

selected participants and obtain percent syllables stuttered in the reading condition, number of syllables in each experimental condition, total word count in each experimental condition, and percent syllables stuttered in each experimental condition, and type/token frequency counts. Interrater reliability was determined by comparing the six files transcribed by T2 and comparing them to the same files transcribed by T1 and then conducting a correlational analysis and obtaining a Cronbach's α .

Total Syllables, Percent Syllables Stuttered, and Total Word Count

A type/token frequency count of stuttering events under both conditions for each participant was obtained by measuring and analyzing the percentage of syllables stuttered (Van Riper, 1982; Andrews, 1984; Yaruss, 1997) across the entire corpus. The percentage of syllables stuttered is obtained by dividing the total number of dysfluencies by the total number of syllables and then multiplying by 100. The Real-Time Analysis of Speech Fluency method will be used to obtain this data (Yaruss, 1997). A total word count under each condition was also obtained for each participant under each condition.

Self-Report Questionnaire

Each participant was required to complete a questionnaire at the conclusion of each condition. There are five questions asking them to self-report on their perception of their stuttering severity, comfort, cognitive effort, anxiety, and benefit of disclosure/non-disclosure during the communicative interaction, yielding a score from 1-9 on a Likert Scale for each question. The questions were designed so that numbers 1-4 reflect a more negative experience, number 5 reflects a neutral or less negative experience, and numbers 6-9 reflect a more positive experience. Each participant will then have 5 scores in each condition, as well as a grand total for the entire questionnaire.

The Self-Stigma of Stuttering Scale (4S)

The investigator asked each participant to complete a 4S at the outset of the experiment. The 4S consists of 33 items, arranged in two general categories one reflecting self-stigma and one reflecting public stigma. The items are rated on a Likert scale of 1-5. The participant's responses are tallied and a mean score was obtained. A mean 4S score of 3-5 indicates higher levels of self-stigma, and a mean score below 3 indicated low levels of overall self-stigma (Boyle, 2013).

Means and standard deviations of the ratings were calculated for all five questionnaire questions in each condition and scores on the 4S. Means and standard deviations for total syllables stuttered in the oral reading condition, total syllables in the experimental conditions, total syllables stuttered in each experimental condition, and total word count in the experimental conditions. The total syllables for the oral reading condition was fixed at 369 since it was part of the *SSI-4* (Riley, 2009). Paired t-tests were conducted to determine if the percent syllables stuttered in the oral reading condition, the total syllables in the experimental conditions, the percent syllables stuttered in the experimental conditions, and total words in each experimental condition, were significantly different. Five separate paired t-tests were conducted to determine whether differences in the mean scores on questions related to the dependent variables of self-perception of stuttering severity, comfort level, cognitive effort, anxiety, and self-perceived benefit to self-disclosure across conditions were significant. Effect sizes of the predictor variable (CONDITION) were calculated. A correlational analysis was conducted to examine the relationship between self-report of stuttering severity, comfort, cognitive effort, anxiety, benefit, and level of overall self-stigma (STIGMA) across conditions. A correlational analysis was also conducted to examine the relationship between level of overall self-stigma and total syllables, percent syllables stuttered, and total words across conditions.

Research Questions

There are two research questions related to self-disclosure and two related to overall level of self-stigma. The research questions are listed below.

1. Does self-disclosure have an effect on the participant's self-perception of stuttering severity (SPSS), comfort (COM), cognitive effort (COGE), anxiety (ANX), and benefit (BEN) during the communicative interaction?
2. Does self-disclosure have an effect on the total syllables produced, percent syllables stuttered, and total word count during the communicative interaction?
3. Is level of overall self-stigma associated with self-perception of stuttering, comfort level, cognitive effort, anxiety level, and perception of benefit to disclosure?
4. Does level of overall self- stigma have an effect on total syllables produced, percent syllables stuttered, and/or total word count in the disclosed and non-disclosed conditions?

CHAPTER 4

RESULTS

The research questions in this study were designed to investigate self-disclosure from the perspective of the PWS, its effects on speech parameters during an experimental task, and the relationship between level of stigma and the dependent variables self-perception of stuttering severity (SPSS), comfort (COM), cognitive effort (COGE), anxiety (ANX), and benefit of disclosure (BEN) . In order to determine if a participant's disclosure state had an effect on the dependent variables of self-perception of stuttering severity(SPSS), comfort (COM), cognitive effort (COGE), anxiety (ANX), and benefit of disclosure (BEN) the participants were given a questionnaire after each experimental condition, disclosed (DC) or non-disclosed (NDc), reflecting those variables. Descriptive statistics are provided as well as results of statistical analyses performed to explore differences, relationships, and predictors between the independent variables and the dependent variables.

Descriptive statistics are provided for total syllables produced during the Map Task, percent syllables stuttered during the Map Task, and total word count during the Map Task. Statistical analyses were performed to explore the differences, relationships, and predictor effects of disclosure state on those three variables. The total syllables stuttered on an oral reading task taken from the *SSI-4* (Riley, 2009) with a fixed number of syllables across subjects (369) was analyzed in order to make a comparison between a speaking and non-speaking condition.

Each participant's calculated mean on the *Self-Perceptions of Stuttering Severity (4S)* (Boyle, 2012) provided an overall stigma score reflecting a participant's level of self-stigma. Descriptive statistics are provided describing the sample population. Finally, linear regression analyses were performed to determine if level of stigma acted as a predictor of the participants'

responses for SPSS, COM, COGE, ANX, and BEN as well as a predictor of total syllables, percent syllables stuttered, and total word count in both the Dc and NDc conditions. The results of these analyses are presented for each of the research questions.

Research Question 1: Does Self-Disclosure Have an Effect on the Participant's Self-Perception of Stuttering Severity (SPSS), Comfort (COM), Cognitive Effort (COGE), Anxiety (ANX), and Benefit (BEN) during the communicative interaction?

Results for Disclosure

A correlational analysis on the variables SPSS (Q1), COM (Q2), COGE (Q3), and ANX (Q4) was conducted to determine if these variables have convergent validity. These four self-evaluating elements are frequently found together in rating scales (Andrews & Cutler, 1974; Boyle, 2013) and test instruments (Yaruss & Quesal, 2006) used with people who stutter, supporting the idea that they assess a common trait. In the disclosed (Dc) condition (Cronbach's $\alpha = .85$) and in the non-disclosed condition (Cronbach's $\alpha = .89$), SPSS, COM, COGE, and ANX are highly correlated; however, when the variable benefit to disclosure (BEN) was included in the analysis with the other four, the correlation was weaker in the Dc condition (Cronbach's $\alpha = .58$) and in the NDc condition (Cronbach's $\alpha = .63$). Thus, it can be said that SPSS, COM, COGE, and ANX form a separate construct, and can be considered a type of Cognitive-Affective Index which may have value as an element in the assessment protocol with people who stutter. The dependent variable, benefit of disclosure BEN, will be included in relevant analyses and reported on separately in each section of this chapter.

Descriptive Statistics for SPSS, COM, COGE, and ANX

Table 1 provides the descriptive statistics representing the participants' responses on SPSS (Q1), COM (Q2), COGE (Q3), ANX (Q4) in the disclosed (Dc) and non-disclosed conditions (NDc). On the questionnaire, a score of 1 is the most negative and a score of 9 is the most positive with a score of 5 as the neutral response. These data are graphically represented in

Figure 3. Means and Standard Errors for SPSS, COM, COGE, and ANX Across Conditions

Table 2.

Frequency Distribution of Likert Responses for SPSS, COM, COGE, and ANX Across Conditions

Likert Rating (1= most negative, 9 = most positive)

Variable ↓	1	2	3	4	5	6	7	8	9
DcQ1 (SPSS)	1	1	0	1	0	4	3	9	6
DcQ2 (COM)	0	1	1	0	2	3	3	10	5
DcQ3 (COGE)	1	4	1	1	2	2	6	7	1
DcQ4 (ANX)	1	2	2	0	3	0	6	7	4
NDcQ1	0	0	2	1	2	1	6	8	5
NDcQ2	0	0	2	3	1	2	5	6	6

Table 2. (continued)									
Likert Rating (1= most negative, 9 = most positive)									
NDcQ3	3	1	2	1	5	2	5	4	2
NDcQ4	0	3	1	3	1	4	6	4	3

The skewness and kurtosis for all four of the dependent variables are above and below 0 but the majority of the values are between -1.0 and 1.0; however, the variables with the most significant deviation from 0 are DcQ1 (*skewness* = -1.70, *kurtosis* = 2.74), DcQ2 (*skewness* = -1.43, *kurtosis* = 1.80), and NDcQ1 (*skewness* = 1.10, *kurtosis* = .435). The frequency distribution (see Table 2) also shows a negative skew for all variables across conditions indicating that the responses are clustered toward the higher end of the Likert scale, between 6 and 9.

The dispersion of the means for the dependent variables also show high variability as measured by the standard deviations and variance values and the standard error for the dependent variables across conditions is very small and very similar. This could be a function of the sample size; however, these findings may also reflect the inherent variability and heterogeneity within the population of people who stutter (Smith & Kelly, 1997; Bernstein Ratner & Bloodstein, 2008).

Summary. The descriptive statistics for the dependent variables SPSS, COM, COGE, and ANX revealed that the sample showed relatively high variability with participants' responses primarily clustering in the higher numbers (Likert ratings 6-9). This gave the distribution a slightly negative skew in the Dc and NDc conditions. An interesting result was that in the Dc condition, the means for SPSS and COM were platykurtic and negatively skewed toward a perception of more fluency and more comfort in the Dc condition. In the NDc condition, kurtosis for these variables was negligible, but a negative skew was also noted for SPSS, although less

than in the Dc condition. Taken together, this shows that the means in both states of disclosure were clustered around higher rankings, but in the Dc condition the cluster around the higher rankings suggest a self-perception of greater fluency and comfort than in the NDc condition.

Q5 Benefit (BEN)

The participants' scores on Q5 in each condition are provided in APPENDIX E. The means and standard deviations across participants for BEN in the Dc condition ($M = 5.04$, $n = 25$, $SD = 3.02$) and in the NDc condition ($M = 4.16$, $n = 25$, $SD = 2.79$) are graphically displayed in Figure 4.

Figure 4. Means and Standard Errors for DcQ5 (BEN) and NDcQ5 (BEN) across Participants

The descriptive statistics for the BEN dependent variable (see Table 3) indicate that the distribution of means is very close to 0 for DcQ5 (*Skewness* = $-.367$) although platykurtic (*Kurtosis* = -1.57); and for NDc Q5 (*Skewness* = $.345$, *Kurtosis* = -1.24) also with a platykurtic distribution. The frequency distribution provided in tabular form (see Table 4) shows that 48% of the values are between 7 and 9 on the Likert scale for the Dc condition, while only 28% are between 7 and 9 on the same scale for the NDc condition. The kurtosis for each condition indicates that there is a wider spread of values in each reflecting the heterogeneity of this

sample, a characteristic of the population of people who stutter (Smith & Kelly, 1997; Bloodstein & Bernstein Ratner, 2008).

The standard deviation and variance for Q5 was high in the Dc condition ($SD = 3.02$, $var. = 9.12$) and in the NDc condition ($SD = 2.79$, $var. = 7.80$). The standard error of the mean in the Dc condition ($SEM = .60$) and the NDc condition ($SEM = .55$) were essentially similar.

Table 3. Descriptive Statistics for DcQ5 (BEN) and NDcQ5 (BEN)			
Condition	Statistic	Value	Standard Error
DcQ5	Mean	5.04	.60
	95% CI Lower Bound	3.79	
	Upper Bound	6.28	
	Median	6.00	
	Variance	9.12	
	Standard Deviation	3.02	
	Minimum	1.00	
	Maximum	9.00	
	Range	8.00	
	Interquartile Range	6.50	
	Skewness	-.367	.464
	Kurtosis	-1.57	.902
NDcQ5	Mean	4.16	.55
	95% CI Lower Bound	3.00	
	Upper Bound	5.31	
	Median	4.00	
	Variance	7.80	

Table 3. (continued)			
	Standard Deviation	2.79	
	Minimum	1.00	
	Maximum	9.00	
	Range	8.00	
	Interquartile Range	6.00	
	Skewness	.345	.464
	Kurtosis	-1.24	.902

Table 4. Frequency Distribution DcQ5 (BEN) and NDcQ5 (BEN)					
Dc5 Benefit to Disclosing 1 = No Benefit, 9 = A Significant Benefit			NDc5 Benefit to Not Disclosing 1 = No Benefit, 9 = A Significant Benefit		
Likert Rating	Frequency	Percent	Likert Rating	Frequency	Percent
1	7	28	1	7	28
2	1	4	2	2	8
3	1	4	3	3	12
4	0	0	4	1	4
5	2	8	5	5	21
6	2	8	6	0	0
7	6	24	7	3	12
8	4	16	8	2	8
9	2	8	9	2	8

Summary for Q5 (BEN). The frequency distribution data shows the Likert scores clustered more in the higher range in the Dc condition (48%) of the Likert scale than they did in the NDc condition (28%). This distribution suggests that the participants rated the benefit of disclosing higher than they did not disclosing to their communication partner. A comparison of means using paired t-tests will address differences.

Results of the Paired t-tests for Dependent Variables SPSS, COM, COGE, ANX, and BEN

Paired-samples t-tests were used to analyze the data. The paired t-test is similar to a repeated measures ANOVA, but since this investigation has only two levels of one predictor variable, the t-test is the more appropriate analysis. The paired t-tests were conducted to compare the dependent variables of self-perception of stuttering (SPSS), comfort (COM), cognitive effort (COGE), anxiety (ANX), and benefit to disclosure (BEN) on the disclosed and non-disclosed conditions.

Self-Perception of Stuttering Severity (SPSS)

A paired-samples t-test was conducted to compare the effects of the predictor variables (disclosed or non-disclosed condition) on the participants' self-perception of stuttering during the communicative event. There was a non-significant difference in the scores for the Dc condition ($M=7.12$, $SD=2.10$) when compared to the NDc condition ($M=7.08$, $SD= 1.80$); $t(24) = .120$, $p = .906$.

Comfort (COM)

A paired-samples t-test was conducted to compare the effects of the predictor variables (disclosed or non-disclosed condition) on the participants' comfort during the communicative event. There was a non-significant difference in the scores for the Dc condition ($M=7.16$, $SD= 1.84$) when compared to the NDc condition ($M=6.88$, $SD= 1.98$); $t(24) = .719$, $p = .479$.

Cognitive Effort (COGE)

A paired-samples t-test was conducted to compare the effects of the predictor variables (disclosed or non-disclosed condition) on the participants' comfort during the communicative event. There was a non-significant difference in the scores for the Dc condition ($M = 5.80$, $SD = 2.46$) when compared to the NDc condition ($M = 5.48$, $SD = 2.50$); $t(24) = .869$, $p = .394$.

Anxiety (ANX)

A paired-samples t-test was conducted to compare the effects of the predictor variables (disclosed or non-disclosed condition) on the participants' comfort during the communicative event. There was a non-significant difference in the scores for the Dc condition ($M = 6.40$, $SD = 2.44$) when compared to the NDc condition ($M = 6.06$, $SD = 2.20$); $t(24) = .844$, $p = .407$.

Benefit (BEN)

A paired-samples t-test was conducted to compare the effects of the predictor variables (disclosed or non-disclosed condition) on the participants' perception of the benefit of disclosure or not disclosing. There was a non-significant difference in the scores for the Dc condition ($M = 5.04$, $SD = 3.02$) when compared to the NDc condition ($M = 4.16$, $SD = 2.79$); $t(24) = 1.25$, $p = .221$.

Summary of Paired t- test Results. The findings of the paired t-tests across all participants for the dependent variables SPSS, COM, COGE, and ANX did not reach a level of significance. Under the experimental conditions, whether or not the participants disclosed that they were a PWS had no effect on their level of comfort, cognitive effort during the task, or level of anxiety.

Research Question 2: Does Self-Disclosure Have an Effect on the Total Syllables Produced, Percent Syllables Stuttered, and Total Word Count during the Communicative Interaction?

Results of the Experiment

Inter-Rater Reliability

Two trained transcribers viewed the edited version of the videotaped interactions between the participants and their communication partners. That is, in order to keep the judges blinded to the experimental conditions, i.e., disclosed vs. non-disclosed, the initial segment of the videotape which includes the disclosure statement by the PWS was edited out. Their instructions were to count the total number of syllables, the percent syllables stuttered in the reading task, and the disclosed and non-disclosed conditions and obtain type/token fluency counts. A total word count for each experimental condition was also obtained. Only the percentage of syllables stuttered was obtained for the reading passage since the total syllables was constant and a word count was irrelevant for the purposes of this study. The Inter-Rater reliability was very high and the results can be seen in Table 5 below. Only the data from the primary transcriber (T1) was then entered into the analysis due to the high inter-rater agreement.

Table 5.	
Inter-Rater Reliability	Statistic
Percent syllables stuttered on the oral reading task (PSSR)	Cronbach's alpha = .978
Total syllables in the disclosed condition (TSyIIDc)	Cronbach's alpha = .992
Percent syllables stuttered in the disclosed condition (PSSDc)	Cronbach's alpha = .993
Total word count (TWCDc) in the disclosed condition	Cronbach's alpha = .990

Table 5. (continued)	Statistic
Total syllables in the non-disclosed condition (TSyllNDc)	Cronbach's alpha = .999
Percent syllables stuttered in the non-disclosed condition (PSSNDc)	Cronbach's alpha = .992
Total word count in the non-disclosed condition (TWCNDc)	Cronbach's alpha = 1.00

Descriptive Statistics for Total Syllables, Percent Syllables Stuttered, and Total Word Count

The individual raw data for PSSR, TSyllDc, PSSDc, TWCDc, TSyllINDc, PSSNDc, and TWCNDc are provided in APPENDIX B. The descriptive statistics for the dependent variables in the disclosed (Dc) and non-disclosed conditions (NDc) are provided in Table 6. A comparison of means for total syllables (TSyll) across conditions is shown in Figure 5; for percent syllables stuttered (PSS) across oral reading and experimental conditions is shown in Figure 6; and for total word count (TWC) across conditions in Figure 7. The means are very similar across conditions with great variability around those means, especially for the percent syllables stuttered across conditions as evidenced by the dispersion statistics. Similar to the SPSS, COM, COGE, and ANX variables the heterogeneity of the sample is evident in the speech data.

Table 6. Descriptive Statistics for Total Syllables, Percent Syllables Stuttered, and Total Word Count							
Statistic	Dependent Variable						
	%SSR ^a	Total SyllDc	%SSDc	Total WCDc	Total SyllINDc	%SSNDc	Total WCNDC
Mean	4.73	437.84	6.86	356.60	422.04	6.35	346.80

Table 6. (continued)							
Statistic	Dependent Variable						
	%SSR ^a	Total SyllDc	%SSDc	Total WCDc	Total SyllINDc	%SSNDc	Total WCNDc
95% CI							
Lower	2.38	360.43	4.31	289.95	347.78	3.82	285.12
Upper	7.08	515.24	9.41	423.24	496.29	8.88	408.47
Median	2.71	383.00	4.64	317.00	395.00	4.72	326.00
Variance	32.45	35166.72	38.17	26067.08	32359.7	37.53	22323.0
Std. Dev.	5.69	187.52	6.18	161.45	179.88	6.12	149.41
Min	0.00	189.00	.56	149.00	212.00	0.00	171.00
Max	21.68	1012.00	25.80	891.00	884.00	26.25	724.00
Range	21.68	823.00	25.24	742.00	672.00	26.25	553.00
IQ Range	2.98	234.00	5.32	193.00	205.50	6.04	161.00
Skew	2.07	1.40	1.92	1.62	1.22	1.93	1.23
Kurtosis	3.42	2.61	3.54	3.92	1.18	4.00	1.09

^aThe reading passage was constant at 369 syllables

Figure 5. Means and Standard Errors for Total Syllables in Dc and NDc Conditions Across Participants

Figure 6. Means and Standard Errors for Percent Syllables Stuttered in the Reading, Dc, and NDc Conditions across Participants

Figure 7. Means and Standard Errors for Total Word Count in the Dc and NDc across Conditions Across Participants

Summary. The descriptive statistics reveal that the data for Total Syllables, Percent Syllables Stuttered, and Total Word Count, are not normally distributed and are also characterized by high variability. The frequency distributions as shown by the skew and kurtosis results indicate that in the Dc and NDc conditions, the total syllables produced were clustered on the lower end as was the total word count (negatively skewed and platykurtic). The same is true for percent syllables stuttered. The heterogeneity of the sample, however, produced

outliers but that data must be included in order to accurately reflect the variability characteristic of severity levels among people who stutter (Bernstein Ratner & Bloodstein, 2008). These few higher means pulled the distribution towards the negative tail in both conditions. The participants who had produced a higher percent syllables stuttered did so across conditions.

Results of the Paired t-tests on Percent Syllables Stuttered for the Oral Reading Task and in the Dc and NDC Conditions

Oral Reading Task

A paired-samples t-test was conducted to compare the total syllables stuttered on the oral reading task and the total syllables stuttered in each experimental condition. There was a significant difference in the percent syllables stuttered on the oral reading task ($M = 4.73$, $SD = 5.69$; and the total syllables stuttered in the disclosed condition ($M=6.86$, $SD= 6.17$); $t(24) = 2.80$, $p = 0.01$; and on the oral reading task ($M = 4.73$, $SD = 5.69$ and total syllables stuttered in the non-disclosed condition ($M=6.35$, $SD=6.12$); $t(24) = 2.20$, $p=0.03$. The significant difference in means may be due to the communicative pressure of the Map Task, regardless of state of disclosure.

Results for Total Syllables, Percent Syllables Stuttered, and Total Word Count in the Dc and NDC Conditions

Total Syllables

A paired-samples t-test was conducted to compare the effects of the predictor variables (disclosed or non-disclosed condition) on the total number of syllables spoken during the communicative event. There was a non- significant difference in the scores for the Dc condition ($M = 437.80$, $SD = 187.52$) when compared to the NDc condition ($M = 422.04$, $SD = 179.88$); $t(24) = .769$, $p = .449$.

Percent Syllables Stuttered

A paired-samples t-test was conducted to compare the effects of the predictor variables (disclosed or non-disclosed condition) on the total number of syllables stuttered during the communicative event. There was a non-significant difference in the scores for the Dc condition ($M = 6.86$, $SD = 6.17$) when compared to the NDc condition ($M = 6.35$, $SD = 6.12$); $t(24) = 1.46$, $p = .156$.

Total Word Count

A paired-samples t-test was conducted to compare the effects of the predictor variables (disclosed or non-disclosed condition) on the total word count during the communicative event. There was a non-significant difference in the scores for the Dc condition ($M = 356.60$, $SD = 161.45$) when compared to the NDc condition ($M = 346.80$, $SD = 149.40$); $t(24) = .550$, $p = .588$.

Summary for Paired t-tests. The results of the paired t-tests across participants for the dependent variables of total syllables spoken, total syllables stuttered, and total word count across conditions for all participants indicated that there was a non-significant difference as a result of disclosing or not disclosing that they were a PWS at the outset of the experimental task suggesting that state of disclosure had no effect. These findings are surprising in that disclosure is considered to be an ameliorating factor on tension, stress, anxiety with potential to increase verbal fluency for a PWS during a communicative event (Rosenberg & Curtiss, 1954; Collins & Blood, 1990; Manning, Burlison, & Thaxton, 1999; Manning, 2010; Blood, Blood, Tellis, & Gabel, 2003; Healey, Gabel, Daniels, & Kawai, 2007; Healey, 2010; Lee & Manning, 2010). It may also be the case that disclosure has effects in the long-term more than the short term.

Correlations for SPSS, COM, COGE, ANX, and BEN and Total Syllables, Percent Syllables Stuttered, and Total Word Count

There were non-significant correlations with SPSS, COM, COGE, and ANX and total syllables, percent syllables stuttered, or total word count in the Dc condition. There were significant negative correlations between the self-perception of stuttering severity in the NDc condition and the percent syllables stuttered, $r = -.499$, $n = 25$, $p = 0.01$; and comfort in the NDc condition and percent syllables stuttered, $r = -.433$, $n = 25$, $p = 0.03$. The total syllables produced in the NDc condition was positively correlated with the participants' self-perception of stuttering ($r = .477$, $n = 25$, $p = 0.01$), with their comfort level ($r = .447$, $n = 25$, $p = .02$), and with their perceived anxiety ($r = .501$, $n = 25$, $p = 0.01$). For total word count in the NDc condition, there were positive correlations with self-perception of stuttering severity ($r = .473$, $n = 25$, $p = .01$; with comfort ($r = .445$, $n = 25$, $p = .02$); and with level of anxiety ($r = .494$, $n = 25$, $p = .01$). The correlations between these variables are shown in Table 7.

Table 7. Significant Correlations for SPSS, COM, and ANX in the NDc Condition				
Variable	Statistic	TSyll	PSS	TWC
NDcQ1 (SPSS)	Pearson Correlation	.477*	-.499*	.473*
	Sig. (2-tailed)	.016	.011	.01
	N	25	25	25
NDcQ2 (COM)	Pearson Correlation	.447*	-.433*	.445*
	Sig. (2-tailed)	.025	.030	.02
	N	25	25	25
NDcQ4 (ANX)	Pearson Correlation	.501*	-.272	.494*
	Sig. (2-tailed)	.011	.189	.01
	N	25	25	25

*Correlation is significant at the .05 level (2-tailed)

Summary of Correlational Analyses. There were non-significant correlations with SPSS, COM, COGE, and ANX and total syllables, percent syllables stuttered, or total word count in the Dc condition. There was, however, a moderately strong negative association between a participant's SPSS and percent syllables stuttered as well as a participant's COM rating and percent syllables stuttered and percent syllables stuttered in the non-disclosed state. This is not an unexpected result in both cases. One would assume that as a PWS stutters more, their level of comfort decreases and vice versa and they are perceiving that increase in stuttering severity. Furthermore, there were also moderately strong positive correlations of SPSS, COM and ANX in the NDc condition with total syllables produced suggesting in the non-disclosed state, the participants were talking more and feeling better about their fluency and comfort level. The positive correlation between total syllables and their perception of their level of anxiety, may be related to the fact that they were feeling more comfortable and perhaps successful as a communicator. This was also reflected in the total word count on those same variables. In the NDc condition, there were non-significant correlations between COGE and total syllables, percent syllables stuttered, or total word count. This could mean that the same amount of cognitive effort was expended by the participant across conditions during the Map Task.

Research Question 3: Is Level of Overall Self-Stigma Correlated with Self-Perception of Stuttering, Comfort Level, Cognitive Effort, Anxiety Level, and Perception of Benefit to Disclosure?

Results for Stigma

Descriptive Statistics

The participants' individual overall stigma scores on the 4S (Boyle, 2012) are shown in Figure 8. The descriptive statistics for the stigma data are provided in Table 8 and in Figure 9.

A score between 3.0 and 5.0 indicates a high level of stigma and 3.0 is considered the midpoint of the scale (Boyle, 2012). The descriptive statistics show that there is extremely limited

variability around the mean ($M = 2.83$, $SD = .29$) and all the scores are within a very limited range (Range = 1.12); however, this mean reflects a neutral response indicating that the participants neither agreed nor disagreed with stigmatizing views about people who stutter (Boyle, 2012). A more detailed look at the individual scores shows that 28% of the participants (7/25) had an overall self-stigma score of 3.0 or higher, 12% (3/25) had a score between 2.9 and 3.0, and 60% (15/25) had scores between 2.30 and 2.88.

Figure 8. Individual Overall Self-Stigma Scores on the 4S (N = 25)

Table 8. Descriptive Statistics for Overall Self-Stigma on the 4S			
Variable	Statistic	Value	Standard Error
Stigma Score	Mean	2.83	.058
	95% CI Lower Bound	2.71	
	Upper Bound	2.95	
	Median	2.84	
	Variance	.085	
	Standard Deviation	.29	

Table 8. (continued)			
	Minimum	2.36	
	Maximum	3.48	
	Range	1.12	
	Interquartile Range	.40	
	Skewness	.646	.464
	Kurtosis	.223	.902

Figure 9. Mean and Standard Error Bar of the Overall Self-Stigma Scores on the 4S across Participants

Correlations

In order to determine if there was a relationship between the dependent variables SPSS, COM, COGE and ANX, a Pearson correlation was performed on the data. A significant, though weak, negative correlation emerged between overall self-stigma and SPSS in the Dc condition ($r = -.395$, $n = 25$, $p = .05$, $R^2 = .156$); and in the NDc condition, a negative correlation between the stigma score and the SPSS variable approached significance ($r = -.374$, $n = 25$, $p = .06$, $R^2 = .139$). This indicates that a weak inverse relationship exists between a participant's

self-perception of stuttering severity rating and their overall level of self-stigma score. For the dependent variable BEN, there was a non-significant correlation between stigma and the perceived benefit of disclosure or non-disclosure.

Moderation Analysis: Stigma and SPSS, COM, COGE, ANX and BEN

A moderation analysis using simple linear regression was performed to test if the level of overall self-stigma was acting as a moderating predictor for SPSS, COM, COGE, ANX, and BEN in the Dc and NDc conditions. The participants' stigma score on the 4S was transformed into a z-score. The Y-variable is the difference between the mean of each of the dependent variable, and the x-variable is the stigma z-score. The results of the linear regression analysis are provided in Table 9.

In this analysis it is the β standardized coefficient and the p value that are of interest. Although none of the regressions reached a level of significance it is worth a brief description for clarity purposes. For example, for every 1 SD change in stigma, the difference between the disclosed and non-disclosed condition on the SPSS variable goes down .09 of a sd. The results were non-significant across all dependent variables indicating that level of overall self-stigma was not a moderating factor on the participant's ratings on the dependent variables in the disclosed or non-disclosed condition after the Map Task.

Stigma was not a moderating variable on the participants' self-perception of stuttering, level of comfort, cognitive effort, anxiety, or benefit. The correlational analysis revealed a moderate inverse relationship between a participant's self-perception of stuttering severity rating and their overall level of self-stigma score. For the dependent variable BEN, there was no significant correlation between stigma and the perceived benefit of disclosure or non-disclosure.

Table 9. Results of the Linear Regression Analysis with Overall Self-Stigma Score as the Moderating Variable					
Y-Variable	B	Coefficient of Std. Error	β	p Value	F (1,24)
Dc SPSS - NDc SPSS	-.157	.347	-.094	.656	.204
Dc COM - NDc COM	.495	.393	.254	.220	1.59
Dc COGE - NDc COGE	-.075	.384	-.041	.846	.039
Dc ANX - NDc ANX	-.335	.414	-.166	.426	.655
Dc BEN - NDc BEN	.473	.724	.135	.520	.520

Summary. An overall stigma score of between 3.00 and 5.00 reflects a high level of overall stigma. In this sample, 28% (7/25) of the participants met that criteria; however, since 3.0 is the mid-point of the stigma scale, those values are essentially neutral, indicating that the participants neither agree nor disagree with the stigmatizing views about people who stutter (Boyle, 2012). There was very little variability. Overall stigma was not acting as a moderating variable between the predictor variables and the dependent variables. There was a small inverse relationship between a participant's self-perception of stuttering severity rating and their overall level of self-stigma score. For the dependent variable BEN, there was non-significant correlation between stigma and the perceived benefit of disclosure or non-disclosure.

Research Question 4: Does Level of Overall Self- Stigma Affect Total Syllables Produced, Percent Syllables Stuttered, and/or Total Word Count in the Dc and NDc Conditions?

Correlations

In order to determine if there is a relationship between the level of overall self-stigma and total syllables produced, percent syllables stuttered, and total word count a two-tailed correlational analysis was performed and a Pearson product-moment coefficient was obtained. The results indicated that there was a non-significant correlation between stigma score and the total syllables produced in the Dc condition, $r(25) = .141, p = .502$, percent syllables stuttered in the Dc condition, $r(25) = .280, p = .175$, and total word count in the Dc condition, $r(25) = .175, p = .403$. For the NDc condition, the same procedure was performed and a Pearson product-moment coefficient was obtained. The results were non-significant for total syllables produced $r(25) = .022, p = .917$, percent syllables stuttered, $r(25) = .324, p = .114$, and total word count, $r(25) = .007, p = .973$.

Moderation Analysis: Stigma on Total Syllables, Percent Syllables Stuttered, and Total Word Count

A moderation analysis using a simple linear regression was performed to test if the level of overall self-stigma was acting as a moderating predictor on the total syllables produced, percent syllables stuttered, and total word count in the Dc and NDc conditions. The participants' overall self-stigma score was transformed into a z-score. The Y-variable is the difference between the mean of total syllables in the disclosed condition, percent syllables stuttered in the disclosed condition, and total word count in the disclosed condition, and the same variables in the non-disclosed condition. The x-variable is the stigma z-score. The results of the linear regression analysis are provided in Table 10.

Table 10. Results of the Linear Regression Analysis for Total Syllables, Percent Syllables Stuttered, and Total Word Count with Overall Self-Stigma Score as the Moderating Variable					
Y-Variable	B	Coefficient of Std. Error	β	p Value	F (1,24)
Total Syllables Dc – Total Syllables NDc	21.70	20.93	.211	.311	1.07
Percent Syllables Stuttered Dc - Percent Syllables Stuttered NDc	-.256	.361	-.147	.484	.505
Total Word Count Dc – Total Word Count NDc	26.57	17.74	.298	.148	2.24

The results were non-significant across all dependent variables in both conditions indicating that the level of overall self-stigma did not significantly influence the total syllables produced, the percent syllables stuttered, or the total word count for the participants.

Summary. The descriptive statistics for overall level of stigma indicate that individual scores were within a highly limited range with very low variability around the mean of 2.83. An overall stigma score of 3.00 – 5.00 is considered high, however, the mean for this sample is a neutral response and indicates that the participants neither agreed or disagreed with the stigmatizing views reflected on the 4S (Boyle 2012).

For the SPSS, COM, COGE, and ANX variables, a moderate inverse relationship was found between a participant's self-perception of stuttering severity rating and their overall level of self-stigma score. For the dependent variable BEN, there was a non-significant correlation between level of overall self-stigma and the perceived benefit of disclosure or non-disclosure.

A moderation analysis using a linear regression was performed on the data to determine if overall self-stigma was acting as a moderating factor on SPSS, COM, COGE, and ANX and the results were non-significant across variables. For the speech variables of total syllables, percent syllables stuttered, and total words, there were non-significant correlations between the variables and overall self-stigma. A moderation analysis using a linear regression to determine if overall self-stigma was acting as a moderating factor on those dependent variables was non-significant.

Additional Analyses Related to Stigma

Results for Stigma and Participant's Age

Self-stigmatization develops in phases over time as the stigmatized individual interacts in society and a social identity is formed as a stigmatized individual (Goffman, 1963). This suggests that there may be an age effect on overall self-stigma. The age range of the participants in this study was 19-73 years. In order to test if age was impacting level of overall self-stigma, a linear regression was conducted and was not significant ($B = -.002$, *Coefficient Std. Error* = .004, $\beta = -.140$, $F(1, 24) = .462$, $p = .504$). The results show that age was not a predictor of stigma score. This suggests that stigmatization does not necessarily develop from less to more simply due to living longer as a PWS and this fact is reflected in the individual stigma scores as seen in Figure 8 (p. 60) as well as the mean and standard deviation for that data ($M = 2.83$, $SD = .29$).

Results for Self-Help Group Experience (SHGE) and Overall Self-Stigma

Descriptive Statistics. The therapeutic and self-help group experience (SHGE) varied across participants. In order to test if there was a significant difference between the means of the overall self-stigma score based of group affiliation, the participants were divided into four

groups. The groups were those with current involvement with a self-help group (SHGE Group 1), those with a past history of a self-help group experience (SHGE Group 2), those with no history of involvement with self-help groups (SHGE Group 3), and those who have both a past and current history of self-help group involvement (SHGE 4). The descriptive data is provided in Table 11.

Table 11.					
Mean, Range and Standard Deviation of Overall Stigma Scores based on SHGE					
Group	N	Min	Max	Mean	Std. Deviation
1 (Current SHGE)	5	2.75	3.48	3.10	.33
2 (Past SHGE)	7	2.40	3.36	2.78	.31
3 (No SHGE)	9	2.30	3.00	2.75	.24
4 (Current + Past SHGE)	4	2.60	3.00	2.73	.18

The most interesting finding in this data is that Group 1, those who are currently enrolled in a SHG had the highest mean overall stigma score. An independent samples t-test was done on the data to determine if there was a significant difference between mean overall stigma scores based on group. First, the groups were collapsed, with Groups 1 and 4 coded as New Group 1 since they both share current involvement in a SHG; and Groups 2 and 3 were coded as New Group 0 since they both share no history of SHGE. This grouping increased the N in each new group, although still small. The results for New Group 1 ($N = 9$) ($M = 2.94$, $SD = .33$) and New Group 0 ($N = 16$) ($M = 2.77$, $SD = .26$) were non-significant ($F = .772$, $t(23) = -1.45$, $p = .389$) and no generalizations can be made from them due to the sample size in each group.

Summary. The additional analyses conducted to determine if a participant's age or self-help group experience impacted their overall-self-stigma. The results indicated that these two

variables were not related. An interesting finding was that those currently enrolled in a self-help group had the highest overall self-stigma score. The implications for this finding will be discussed in the Chapter 5.

CHAPTER 5

DISCUSSION

The four research questions of this study with adults who stutter addressed 1) the interactions and relationships between self-perception of stuttering severity, comfort, cognitive effort, anxiety, and benefit of disclosure in a disclosed condition and in a non-disclosed condition; 2) the effects of a participant's state of disclosure on the total syllables produced, the percent syllables stuttered, and the total words produced during a conversational task; 3) the relationship between overall level of self-stigma and self-perception of stuttering, comfort, cognitive effort, and anxiety in a disclosed and non-disclosed state; and 4) the relationship of overall level of self-stigma on total syllables produced, the percent syllables stuttered, and the total words produced during the experimental task.

The Cognitive-Affective Index

The four variables self-perception of stuttering severity, comfort, cognitive effort, and anxiety had high convergent validity forming a Cognitive-Affective Index. Although the variables were not analyzed as a single construct in this study, the results suggest that including them in an investigation of the communicative interaction between a PWS and a NFS is valid for capturing the participants' perceptions of the communicative event. It is also possible to use the Cognitive-Affective Index as part of an assessment protocol for adults who stutter (AWS). For example, assessing a client's self-perception of stuttering, comfort level cognitive effort, and anxiety, after the intake interview or other form of talk during the evaluation process, can inform the treatment plan. Combining that with a battery that includes the *Overall Assessment of the Speaker's Experience of Stuttering* (OASES) (Yaruss & Quesal, 2010), as well as other commonly used scales measuring the impact of stuttering on an individual's life, can provide a

comprehensive, multi-dimensional profile of the client, consistent with the multifactorial nature of the disorder.

Self-Disclosure

Self-disclosure, a frequently used therapeutic technique, is considered to be an ameliorating factor on tension, stress, and anxiety with the potential to increase verbal fluency for a PWS during a communicative event (Rosenberg & Curtiss, 1954; Collins & Blood, 1990; Manning, Burlison, & Thaxton, 1999; Manning, 2010; Blood, Blood, Tellis, & Gabel, 2003; Healey, Gabel, Daniels, & Kawai, 2007; Healey, 2010; Lee & Manning, 2010). The participants disclosed at the outset of the communicative interaction, and it is a generally held principle that if a PWS discloses his stuttering to his communicative partner at the outset of an interaction then the listener benefits and has positive perceptions of the PWS (Collins & Blood, 1990; Healey et al., 2007; Healey, 2010; Lee & Manning, 2010). The therapeutic goal of self-disclosure early in the communicative interaction is not to increase verbal fluency, although that may be a secondary effect due to reduced anxiety resulting in less avoidance behaviors. The primary purpose of self-disclosure is to foster self-acceptance, reduce the need for avoidance strategies, and to present a more authentic social self. The immediate social benefit to self-disclosure for a PWS who is stuttering freely is that it eliminates the dichotomous identity common to stigmatized individuals, the virtual and the actual (Goffman, 1963), and chooses to present his actual, authentic social identity in communicative and public interactions, which opens a window for increased comfort and less anxiety.

There are surprising findings regarding the participants' perception of the benefit of self-disclosure. The lack of statistically significant differences across participants and conditions on their self-perception of stuttering severity, comfort, cognitive effort, anxiety, or

benefit of disclosure is not expected. It does appear, however, based on the frequency distribution of the participants' responses for self-perception of stuttering severity and comfort, that there is some level of preference for self-disclosure, just not enough to make a statistical difference measurable. One can see this manifested in the participants' mean response to the benefit question in the disclosed condition which was 5.04 on the 1 – 9 Likert Scale. At first glance this appears to be a neutral response; however, it does indicate that they were perceiving some benefit to disclosing, though at a lower level of magnitude than anticipated based on descriptions in the literature on self-disclosure (Derlega, Matts, Petronio, & Margulis, 1993; Panchakis, 2007; Ragins, 2008). This may also be an indicator that being disclosed during a communicative interaction may not have the same effect for all people who stutter, playing a small role for some, a larger role for others, but not decisive role in the real-time flow of the communicative event. Furthermore, although the participants did not demonstrate a clear preference for being disclosed or not disclosed the descriptive statistics provide a subtle insight into their perception. Upon examination of the frequency distributions for DCQ5 (Benefit) and NDcQ5 (Benefit), 48% of the participants ranked the benefits of disclosure between 7 and 9 in the disclosed condition while only 28% did so for the NDc condition. Although there was not a statistically significant difference between the means in those conditions for this variable, these percentages do suggest two things. First, that there is a sensitivity to the state of disclosure; and second, that more participants felt a positive benefit about disclosing that they were a person who stutters, than they did not disclosing. Surprisingly, the self-perception of stuttering severity, comfort, cognitive effort, and anxiety, are not significantly correlated with state of disclosure, which is contrary to traditionally held beliefs about self-disclosure as a beneficial therapeutic factor for a PWS in communicative interactions (Manning, 2010). Finally, it may be that self-disclosure benefits the listener more than the PWS during a communicative interaction, but can

benefit the PWS over time as a tool for self-acceptance and developing an authentic social self despite stigmatization (Goffman, 1963).

The speech variables under examination were not affected by state of disclosure; however, a comparison with the percent syllables stuttered for the Oral Reading task and the percent syllables stuttered in each condition was significantly different. One can infer from this that the pressure of the conversational task in this social interaction produced a primary threat (Crocker et al., 1998) common to people who stutter, and negatively influenced the participants' fluency. During the oral reading task, a non-interactive task, the participant was left alone in the experimental space to avoid any possible contamination on verbal fluency through the presence of another individual. Reading aloud is difficult for some people who stutter but not others, despite environmental context, yet the significant difference in the amount of stuttering during the communicative interactions does support the concept that stuttering is impacted by the social interaction.

In this study, neither the disclosed condition nor the non-disclosed condition have an effect on total syllables produced, percent syllables stuttered, or total word count. It was, however, in the *non-disclosed condition* that the participants' self-perception of stuttering and their level of comfort varied inversely with the percent syllables stuttered, evidenced by a moderate negative correlation, even though there was a non-significant difference in percent syllables stuttered across conditions. These relationships are not unexpected for a PWS, but the finding is contrary to the expected outcome regarding state of disclosure. As previously discussed, self-disclosure is commonly held to have positive effects on tension, level of anxiety, and even verbal fluency in PWS. The first question of interest is why the participants are reporting more comfort, less anxiety, and a more positive perception of stuttering severity when

compared to the disclosed condition? This is a critical finding because it suggests that once the communicative interaction begins, disclosing that one is a PWS plays less of a decisive role in the interaction. This fits with the finding that the participants were equivocal in their perception of the benefits of either. The second question of interest is why these relationships between self-perception of stuttering, comfort, and percent syllables stuttered exist in the non-disclosed state. It may be the case that once the interaction begins state of disclosure matters less than feelings of comfort and anxiety. If those two emotional variables are perceived as favorable, then state of disclosure becomes moot, hence their equivocation on its benefit. Again, it may be the long-term sociological effect of self-disclosure that benefits the PWS and the short-term communicative effect that benefits the listener.

Finally, the results indicate that as the participants increase the amount of talk in the non-disclosed condition and not the disclosed condition, they have a more positive perception of their speech fluency, feel more comfortable, and describe a lower level of anxiety during the Map Task. Therefore, is it accurate to speculate that self-disclosure provides no benefit for a PWS at the outset of a communicative interaction? I believe that self-disclosure fosters the facilitation of an authentic social self by playing a *long-term role* in the communicative life of the PWS and that its importance in the momentary interaction may be inflated. The reason we see the positive effects in the non-disclosed condition can be explained by the fact that stuttering is a less concealable stigma and once the interaction begins, disclosing is moot, and the communicative interaction proceeds and unfolds as it will. As the PWS begins the task and is finding success and no negative reactions from the other interactant, then his perception of the communicative interaction task a positive turn, regardless of state of disclosure. The findings for cognitive effort suggest that a PWS is continually focused on his speech fluency regardless of state of disclosure. This is suggested by the finding that there was a non-significant difference

for this variable across conditions and no correlation with either state of disclosure. A general conclusion is that the *state of disclosure* is not playing a decisive role in the real-time communicative interaction from the perspective of the PWS.

Stigma

Overall level of self-stigma is not acting as a moderating variable for COM, COGE, ANX, and BEN or for total syllables produced, percent syllables stuttered, or total word count. This suggests that even though stigma is persistent across participants ($M = 2.83$, $SD = .29$, $N = 25$) it is not affecting the cognitive-affective elements nor the speech of the participant during the communicative interaction. There was, however, an inverse relationship for SPSS and overall self-stigma score in the Dc condition. Just as a *listener's perception*, based on stereotypes, is of great concern for a PWS who has not reached a level of self-acceptance, *self-perception* of their fluency is related to their overall level of self-stigma. Thus, for those participants who had a higher stigma score, it is not the *frequency* of dysfluency that matters, but their level of stigma changes their perception of their fluency, and vice versa. This is consistent with the fact that a PWS who has a heightened sense of stigma becomes hyper-aware of the entire social interaction as it proceeds and as will be seen in the next section, is continuously evaluating that interaction as it is happening. This requires attention to their social presentation to the other interactant and thus they are managing information about themselves throughout (Goffman, 1963). In this case, deciding whether to continue with attempts at concealment of the stigma or to stutter freely.

Age and Self-Help Group Experience (SHGE)

A participant's age was not a predictive factor in their overall level of stigma which suggests that self-stigma does not develop from less to more simply base on years as a PWS

involved in communicative interactions. This is also evident from the individual stigma scores which varied very little despite the large range in age. Self-stigma is more idiosyncratic in its development, yet the scores across age groups indicates that when a PWS integrates the marginalized social identity of a stigmatized person into his personal identity (Goffman, 1963) it remains regardless of therapeutic history or SHGE.

Those participants in New Group 1 (SHG currently or currently and in the past) are more likely to have higher overall self-stigma scores than those in New Group 2 (No SHGE or in the past only). When the groups are separated, the mean overall stigma score for the group currently enrolled in a SHG is the highest at 3.10 (.33). Interestingly, Boyle (2012) reported that the mean overall self-stigma score 3.03 in a sample of 291 respondents to the 4S. This is a very interesting finding. The self-help groups have value for multiple reasons including affective (81%), social (74%), and comfort/safety (50%) (Boyle, 2012) establishing this type of support as an important tool towards self-acceptance. The higher overall level of stigma in the group currently attending a SHG may be due to the fact that the social identity of being a PWS becomes more salient due to group affiliation. Those participants who are currently enrolled may be reflecting this when they completed the 4S prior to the beginning of the experimental task.

The Sociology of Stuttering

The sociological framework of stuttering includes the social context, stigmatization and stereotyping, type of talk-in-interaction, the evaluation and interpretation of the flow of the interaction by the interactants, and the social identity of each interactant. A PWS develops a social identity constructed from the social interactions that he experiences daily over time and how he frames those experiences (Goffman, 1963; Blumer, 1969; Goffman, 1986). The

challenge in any communicative interaction is to decide whether to present his actual identity as a PWS or to attempt to conceal that identity by using avoidance strategies, which is not always successful due to the visibility of the stigma (Goffman, 1963; Butler, 2014). For a PWS, the decision is whether to stutter freely, or attempt to conceal his stuttering in order to avoid the stigma and stereotyping associated with it (Goffman, 1963; Blumer, 1969; Boyle, 2012; Butler, 2014). As noted above, the PWS feels the pressure of the conversational context due to its social nature and evidenced by the differences in self-perception of stuttering severity when compared to an oral reading task, a non-social context, in this study. However, the inverse relationship between the self-perception of stuttering severity, level of comfort and percent syllables stuttered in the non-disclosed condition but not in the disclosed condition raises the question as to the role that self-disclosure plays in the communicative interaction between a PWS and a NFS. This requires a discussion that addresses the nature of the communicative interaction between a PWS and a NFS from the sociological perspective. If the only measurable effect of state of disclosure occurs in the non-disclosed state, then the success of a communicative interaction from the perspective of a PWS is based on more than just disclosing his stuttering to the other interactant.

The social interaction begins with the individual evaluating the situation, and commenting internally on its progress and flow, that is, interpreting it (Blumer, 1969). For a PWS, this process during a given communicative interaction includes an evaluation of his speech fluency as well as the listener's reactions to his speech. Essentially, a PWS attaches meaning and value to his speech by evaluating the degree of fluency as a measure of success or effectiveness (Starkweather, 1987; Bernstein Ratner & Bloodstein, 2008). Sociologically, every communicative interaction for a PWS is a new one, due to its inherent intermittency. This creates a heterogeneous history of responses to communicative interactions based on who the

other interactant is, the setting, and the type of talk-in-interaction (Goffman, 1963; Butler, 2014). Therefore, in the case of a PWS, the entire communicative event itself becomes an object of attention and evaluation—the setting, the type of talk, the other interactant’s response to his stuttering, and his success at not bringing attention to his speech. These internal evaluations over time lead to hierarchies of comfort and/or fear regarding communication events and all of its components. The same hierarchies that are used in treatment to de-sensitize a PWS to those social interactions or contexts. Therefore, a PWS views the communicative event as one whole making it a true sociological object because it can be “indicated or referred to” by the speakers (Blumer, 1969, p. 11). As a consequence, the communicative event is an object to be assessed and parsed with the degree of fluency and the solidity of their social identity as an effective communicator as the parameters being evaluated. Both the PWS and the listener are indicating to themselves that he is a person who experiences stuttered speech, and both are now evaluating the communicative event as one shared object, but from two different perspectives (Goffman, 1963; Blumer, 1969; Woods & Williams, 1976; Turnbaugh, Guitar, & Hoffman, 1979; Ham, 1990; Cooper & Cooper, 1996; Yovetich & Dolgoy, 2001; Bernstein Ratner & Bloodstein, 2008).

The results of this investigation do not indicate that the PWS shares the same opinion on the benefits to self-disclosure as the listener, based on listener data (Healey, 2007). Therefore, as discussed above, it appears that self-disclosure may not benefit both parties equally. It may be the case that the primary objects of evaluation, speech fluency and social identity, during a communicative interaction between a PWS and a NFS are assigned different weights for each interactant. For example, the listener feels more comfortable immediately as a result of a PWS disclosing his stuttering at the outset and therefore sees its value (Manning, 2010); whereas, for the PWS, self-disclosure has not changed his level of self-perception of

stuttering, comfort, cognitive effort, anxiety or his speech fluency in any remarkable way, as the findings indicate. Also, his social identity as a PWS is immediately very clear to the other interactant; whereas for the PWS managing his social identity now receives equal valence with his speech variables. Managing the presentation of his social self as a PWS in order to avoid the stigmatizing views about a PWS becomes a focus (Goffman, 1959; Goffman, 1963).

The sociological elements of stuttering cannot be underestimated. It is embedded in the social interaction, at the intersection of the speaker, the listener, and the context (Goffman, 1963). As a multifactorial disorder it emerges due to a constellation of variables, idiosyncratic in their interaction with each other but common to many people who stutter (Sheehan, 1970; Lemert, 1970; Smith and Kelly, 1997; Acton & Hird, 2004). The continued investigation of the sociological aspects of stuttering should shed light on the nature of partitioning of social contexts (Goffman, 1963), the role that stigma may play in those communicative contexts, the cognitive-affective relationships during the communicative event, and perhaps the ethnographic elements of the disorder (Kovarsky & Crago, 1990-1991).

Limitations of this Study

There are several limitations to this study. The experimental task was conducted in a speech and language clinic and the participants may have been primed for a speech-related task, obviously related to their stuttering. As a consequence, they may already have considered themselves disclosed to the other interactant. Using this design had the potential to affect the performance of a participant either positively (feeling more comfortable) or negatively (unfamiliarity producing more discomfort), depending on whether they perceived this conversational context as a back place (safe to stutter freely), a civil place (safe, but with reservations) or a forbidden place (threatening) (Goffman, 1963). A solution would be to ask

each participant during the initial contact how they view a communicative interaction along Goffman's parameter's and select which participants best fit the design of the study.

Trying to record a naturally occurring conversation with a NFS from the initial greeting to its completion with the knowledge of the PWS, introduces the observer's paradox in which the conversation may be influenced by the presence of the investigator (Blumer, 1969; Labov, 1972). The Map Task was used in an attempt to approximate a conversational interaction as closely as possible while keeping both interactants engaged and talking. This is artificial, but it does capture the dyadic nature of conversation and all of its components (ten Have, 2007), hence the decision to use this unique methodology. The most obvious solution to creating an artificial conversational context would be to record the interaction without the knowledge of the interactants, but this has both informed consent problems and technical issues regarding concealing the recording equipment.

The sample size, although large for a study with this low incidence population, could have affected results. In this study, participants were recruited over 9 months and some were rejected due to speech intelligibility issues and reliability, and some data had to be rejected due to technical failures. Furthermore, the population of people who stutter is highly variable and this is a naturally occurring effect of the multifactorial nature of the disorder, in that shared factors do not produce the same effects in all people who stutter (Smith & Kelley, 1997). Therefore, a larger sample of people who stutter, although the obvious solution, may not have the same statistical levelling effects that it would with a disordered population that is more homogeneous, a rare occurrence in communication disorders in general, but especially so in the stuttering population. To attempt to eliminate or reduce this heterogeneity through precise participant selection may result in an inaccurate depiction of the population.

Directions for Future Research

This study fills a gap in the literature related to the perspective of the PWS regarding self-disclosure, a common therapeutic technique, and its effects on speech production variables as well as self-perception of stuttering severity, comfort, cognitive effort, and anxiety within a structured conversational context. There are, however, other questions that arise from this investigation and lines of research which could extend the knowledge of the conversational interactions of a PWS and a NFS.

First, the surprising results regarding state of disclosure suggest a need to investigate this phenomenon further first because it runs counter to the current understanding of the value of disclosure for a PWS; and second because it does not appear to produce the expected perception of reduction in tension and anxiety nor increase comfort to significant levels in the disclosed condition. Self-disclosure was investigated in a structured conversational interaction and there are other types of talk-in-interaction which may produce different results. Therefore, future research could investigate and compare two types of talk along the parameters included in the Cognitive-Affective Index used in this study.

Second, this investigation used the overall self-stigma score as a measure of stigma. Due to the fact that the 4S is designed to assess the individual's concurrence with stigmatizing views that are publicly held as well as self-concurrence, a future investigation can analyze the participant's responses to the separate subtests of the 4S in order to determine in closer detail the level of self-stigma and compare participants based on their responses to each of the subtests. For example, is there a difference between subjects on the Cognitive-Affective variables based on their level of self-concurrence with stigmatizing views, or with stereotype agreement? One could hypothesize that if an individual has a high score on the self-

concurrency questions then his ratings on the Cognitive-Affective Index may be affected differently than one who doesn't.

Finally, all forms of talk-in-interaction have structure and conversational analysis (CA) is the accepted methodology for the analysis of talk in a social encounter (Sacks et al, 1974; Psathas, 1995; Schegloff, 1999; Tetnowski & Damico, 2001; ten Have, 2007). However, capturing a naturally occurring conversation between a PWS and a NFS has technical and ethical issues that must be resolved in order for the data acquired to have any value. The Map Task, although structured for experimental purposes, allows for the structured elements of conversation such as turn-taking, repairs, overlapping, sequencing, and latching to emerge (ten Have, 2007) making them available for study. A conversational analysis between a PWs and a NFS can add another dimension to our understanding of the nature of stuttering. Furthermore, this type of analysis is another step away from frequency counts and allows the researcher to enter the moment of the communicative interaction more descriptively (ten Have, 2007). Finally, investigating the different types of talk-in-interaction such as meetings, interviews, and classroom discourse can begin to create an ethnography of stuttering (Kovarsky & Crago, 1990-91). I believe that the gap in our sociological understanding of stuttering can be filled through conversational analyses in social situations in the disclosed and non-disclosed contexts where that talk occurs.

Conclusion

Stuttering is a uniquely bi-directional and *necessarily* dyadic disorder which emerges in the context of a social interaction. As a consequence, the study of stuttering within a sociological framework merits study. It can inform the diagnostic and treatment strategies for speech-language pathologists who work with adults who stutter.

The results of this investigation were unanticipated, but enlightening. The participants' cognitive-affective responses or verbal fluency did not indicate that the state of disclosure played a decisive role in their evaluation and interpretation of the communicative interaction. It does appear, however, that level of comfort and cognitive effort during the conversational interaction are more salient to a PWS. Furthermore, the overall level of self-stigma, although present in all participants, was not acting as a moderating variable during the communicative interaction. I believe that developing a line of research that includes the sociological and ethnographic dimensions of stuttering has value because it will deepen our understanding of the daily lives of people who stutter, their "daily rounds" (Goffman, 1963), the place where they are challenged most.

References Cited

- Acton, C., & Hird, M. J. (2004). Toward a sociology of stammering. *Sociology*, 38(3), 495-513.
- Amster, B. J. (1995). Perfectionism and stuttering. In *Paper presented at the Stuttering: Proceedings of first world conference on fluency disorders*. Nijmegen, Netherlands
- Anderson, A., Brown, G., Shillcock, R., & Yule, G. (1984). *Teaching talk: strategies for production and assessment*. Cambridge: Cambridge University Press.
- Anderson, A.H., Bader, M., Bard, E.G., Boyle, E., Doherty, G., Garrod, S., . . . Thompson, H.S. (1991). The HCRC Map Task Corpus. *Language and Speech*, 24(4), 351-366.
- Andrews, G. (1984). Evaluation of the benefits of treatment. In W. H. Perkins (Ed.), *Stuttering disorders*. (pp. 241-250). New York: Thieme-Stratton.
- Andrews, G. and Cutler, J. (1974). Stuttering therapy: the relation between changes in symptom level and attitudes. *Journal of Speech Hearing Disorders*, 39, 312-319.
- Andrews, G., & Harris, M. (1964). *The syndrome of stuttering*. London: Heinemann medical.
- Andrews, G., Morris-Yates, A., Howie, P., & Martin, N. G. (1991). Genetic factors in stuttering confirmed. *Archives of General Psychiatry*, 48(11), 1034-1035.
- Armson, J., & Kieft, M. (2008). The effect of SpeechEasy on stuttering frequency, speech rate, and speech naturalness. *Journal of Fluency Disorders*, 33(2), 120-134.
- Aron, M.L. (1967). The relationships between measurements of stuttering behavior. *Journal of the South African Speech and Hearing Association*, 14(1), 15.
- Bainbridge, L. A., Stavros, C., Ebrahimian, M., Wang, Y., & Ingham, R. J. (2015). The efficacy of stuttering measurement training: Evaluating two training programs. *Journal of Speech Language and Hearing Research, JSLHR*, 27, January 2015, 1092-4388.
- Blood, I. M., Blood, G. W., Tellis, G. M., & Gabel, R. M. (2003). A preliminary study of self-esteem, stigma, and disclosure in adolescents who stutter. *Journal of Fluency Disorders*, 28(2), 143-159.
- Bloodstein, O. (1972). The anticipatory struggle hypothesis: implications of research on the variability of stuttering. *Journal of Speech and Hearing Research*, 15,(3).
- Bloodstein, O. (1995). *A handbook on stuttering*. San Diego, California: Singular Pub. Group.
- Bloodstein, O., & Ratner, N.B. (2008) *A Handbook on Stuttering*. Clifton Park, NY: Delmar Cengage Learning.

- Blumer, H. (1969). *Symbolic Interactionism: Perspective and Method*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Boyle, M. P. (2012). Self-stigma of stuttering: implications for self-esteem, self-efficacy, and life Satisfaction. Unpublished doctoral dissertation.
- Boyle, M. P. (2013). Assessment of stigma associated with stuttering: Development and evaluation of the self-stigma of stuttering scale (4S). *Journal of Speech, Language, and Hearing Research: JSLHR*, 56(5), 1517-1529.
- Brocklehurst, P.H., Drake, E., & Corley, M. (2015). Perfectionism and stuttering: Findings of an online survey. *Journal of Fluency Disorders*, 44, 46-62.
- Brown, G., Anderson, A., Yule, G., & Shillcock, R. (1983). *Teaching talk: strategies for production and assessment*. Cambridge, UK: Cambridge, University Press.
- Buchner, Erdfelder, Paul, & Lang. G*Power Version 3.1. [Computer Software]. Dusseldorf, Germany: Heinrich-Heine-University.
- Butler, C. (2014). Wanted—straight talkers: stammering and aesthetic labour. *Work, Employment and Society*, 28(5), 718-734.
- Charmaz, K. (2010). Disclosing Illness and disability in the workplace. *Journal of International Education in Business*, 3(½), 6-19.
- Chelune, G.J. (1987). A neuropsychological perspective of interpersonal communication. In J.H. Berg & V.J. Derlega (Eds.), *Self-disclosure: Theory, Research, and Therapy* (pp. 9-34). New York: Plenum Press.
- Collins, C. R., & Blood, G. W. (1990). Acknowledgment and severity of stuttering as factors influencing nonstutterers' perceptions of stutterers. *Journal of Speech and Hearing Disorders*, 55(1), 75-81.
- Cooper, E.B., & Cooper, C.S. (1996). Clinician attitudes toward stuttering: Two decades of change. *Journal of Fluency Disorders*, 21, 119-135.
- Cooper, E. B., & De Nil, L. (1999). Is stuttering a speech disorder? *ASHA*, 41(2).
- Corcoran, J. A., & Stewart, M. (1998). Stories of stuttering. *Journal of Fluency Disorders*, 23(4), 247-264.
- Crocker, J., Major, B., & Steele, C. (1998). Social Stigma. In Gilbert, D. T., Fiske, S. T., & Lindzey, G. (Eds.), *The handbook of social psychology* (pp. 89-107). New York; Boston: McGraw-Hill.
- Daniels, D.E., & Gabel, R.M. (2004). The Impact of Stuttering on Identity Construction. *Top Language Disorders*, 24(3), 200-215.

- DeFleur, M.H., Kearney, P., Plax, T.G., & DeFleur, M.L. (2005). *Fundamentals of Human Communication: Social Science in Everyday Life*. New York, New York: McGraw-Hill.
- Gilbert, D. T., Fiske, S. T., & Lindzey, G. (1998). *The handbook of social psychology*. New York; Boston: McGraw-Hill.
- Guitar, B. (2014). *Stuttering: An integrated approach to its nature and treatment*. Baltimore, MD; London: Lippincott, Williams & Wilkins.
- Derlega, V. L., Metts, S., Petronio, S., & Margulis, S. T. (1993). *Self-Disclosure*. Newbury Park, CA.: SAGE Publications.
- Finn, P., & Ingham, R.J. (1994). Stutterers' Self-Ratings of How Natural Speech Sounds and Feels. *Journal of Speech and Hearing Research*, 37, 326-340.
- Fraser, C., & Scherer, K. R. (1982). *Advances in the social psychology of language*. Cambridge; New York; Paris: Cambridge University Press.
- Goffman, E. (1959). *The Presentation of the Self in Everyday Life*. New York: Random House.
- Goffman, E. (1963). *Stigma; notes on the management of spoiled identity*. Englewood Cliffs, N.J: Prentice-Hall.
- Goffman, E. (1964). The neglected situation. *American Anthropologist*, 66(6), 133-136.
- Goffman, E. (1986). *Frame analysis: An Essay on the Organization of Experience*. Boston: Northeastern University Press.
- Guitar, B., & Peters, T. J. (2013). *Stuttering: an integration of contemporary therapies*. Memphis, TN: The Stuttering Foundation of America.
- Guntupalli, V.K., Kalinowski, J., & Saltuklaroglu, T. (2006). The need for self-report data in the assessment of stuttering therapy efficacy: repetitions and prolongations of speech. The stuttering syndrome. *International Journal of Language and Communications Disorders*, Jan-Feb, 41(1) 1-18.
- Hagstrom, F. & Daniels, D. E. (2004). Social identity and the stuttering experience. *Contemporary Issues in Communication Science and Disorders*, 31, 215-224.
- Ham, Richard E. (1990). What is stuttering: Variations and stereotypes. *Journal of Fluency Disorders*, 15(5-6), 259-273.
- Healey, E. C., Gabel, R. M., Daniels, D. E., & Kawai, N. (2007). The effects of self-disclosure and non self-disclosure of stuttering on listeners' perceptions of a person who stutters. *Journal of Fluency Disorders*, 32(1), 51-69.

- Healey, E. C. (2010). What the literature tells us about listeners' reactions to stuttering: Implications for the clinical management of stuttering. *Seminars in Speech and Language, 31*(4), 227-235.
- Ingham, R. J., Gow, M., & Costello, J. M. (1985). Stuttering and speech naturalness: Some additional data. *Journal of Speech and Hearing Disorders, 50*(2), 217-219.
- Ingham, R.J., Ingham, J.C., Onslow, M., & Finn, F. (1989). Stutterers' Self-Ratings of Speech Naturalness: Assessing Effects and Reliability. *Journal of Speech and Hearing Research, 32*, 419-431.
- Ingham, R.J., & Cordes, A.K. (1997). Identifying the authoritative judgments of stuttering: Comparisons of self-judgments and observer judgments. *Journal of Speech, Language, and Hearing Research, 40*, 581-594.
- Ingham, R.J., Cordes, A.K., Kilgo, M., & Moglia, R. (1998). *Stuttering Measurement Assessment and Treatment (SMAAT)* (software and videodisk). Santa Barbara, CA: University of California, Santa Barbara.
- Ingham, R.J., Bakker, K., Ingham, J.C., Kilgo, M., & Moglia, R. (1999). *Stuttering Measurement System* (SMS software). Retrieved March 25, 2015, from <http://www.speechucsb.edu>.
Do you want to keep this citation?
- Jones, E.E., Farina, A., Hastorf, A. H., Markus, H., Miller, D. T., & Scott, R. A. (1984). *Social Stigma: the psychology of marked relationships*. New York: W. H. Freeman.
- Jones, M., Gebski, V., Onslow, M., & Packman, A. (2002). Statistical power in stuttering research: A tutorial. *Journal of Speech, Language, and Hearing Research, 45*(2), 243-255.
- Jourard, S. M. (1964). *The transparent self: Self-disclosure and well-being*. Princeton, N.J: Van Nostrand.
- Kalinowski, J., Stuart, A., & Armson, J. (1996). Perceptions of stutterers and nonstutterers during speaking and nonspeaking situations. *American Journal of Speech-Language Pathology, 5*(2), 61-67.
- Kovarsky, D., & Crago, M. (1990-1991). Toward the ethnography of communication disorders. *National Student Speech Language Hearing Association Journal, 18*, 44-55.
- Krause, R. (1982). A social psychological approach to the study of stuttering. In Fraser, C. and Scherer, K. R. (Eds.) *Advances in the Social Psychology of Language* (pp. 77-122). Cambridge: New York; Paris: Cambridge University Press.

- Labov, W. (1972). Some principles of linguistic methodology. *Language in Society* 1 (1).
- Lee, K., & Manning, W. H. (2010). Listener responses according to stuttering self-acknowledgment and modification. *Journal of Fluency Disorders*, 35(2), 110-122.
- Lemert, E.M. (1970). Sociological Perspectives. In Sheehan, J.G.'s *Stuttering: Research and Therapy* (pp. 172-187). New York, Evanston, and London: Harper's & Row.
- MacKinnon, S. P., Hall, S., & MacIntyre, P. D. (2007). Origins of the stuttering stereotype: Stereotype formation through anchoring–adjustment. *Journal of Fluency Disorders*, 32(4), 297-309.
- Manning, Burlison, & Thaxton (1999). Listener Response to stuttering modification techniques. *Journal of Fluency Disorders*, 24, 267-280.
- Manning, W. (2010). *Clinical Decision Making in Fluency Disorders*. Clifton Park, NY: Delmar Cengage Learning.
- Martin, R. R., Haroldson, S. K., & Triden, K. A. (1984). Stuttering and speech naturalness. *Journal of Speech and Hearing Disorders*, 49(1), 53-58.
- Milisen, R. (1957). Methods of evaluation and diagnosis of speech disorders. In Travis, L.E. (Ed.), *Handbook of Speech Pathology* (pp. 234-258). New York: Appleton-Century-Crofts.
- Mitchell, S. D. (2009). *Unsimple Truths: Science, Complexity, and Policy*. Chicago: The University of Chicago Press.
- Murphy, B. (1999). A preliminary look at shame, guilt, and stuttering. In N.B. Ratner & E.V. Healey (Eds.) *Stuttering research and practice: Bridging the gap* (pp. 131-143). Mahwah, NJ: Lawrence Erlbaum.
- Naylor, R.V. (1953). A comparative study of methods of estimating the severity of stuttering. *The Journal of Speech and Hearing Disorders*, 18(1), 30.
- O'Brian, S., Packman, A., Onslow, M., Cream, A., & O'Brian, N. (2003). Is Listener Comfort a Viable Construct in Stuttering Research? *Journal of Speech, Language, and Hearing Research*, 46, 503-509.
- O'Brian, S., Packman, A., & Onslow, M. (2004). Self-Rating of Stuttering Severity as a Clinical Tool. *American Journal of Speech-Language Pathology*, 13, 219-226.
- Panchankis, J.E. (2007). The Psychological Implications of concealing a stigma: a cognitive-affective behavioral model. *Psychological Bulletin*, 133(2), 328-345.

- Psathas, G. (1995). *Conversation Analysis: The study of Talk-in-Interaction*. Thousand Oaks (CA): Sage Publications.
- Poindexter, C.C., Shippy, R.A. (2010). HIV diagnosis disclosure: stigma management and stigma resistance. *Journal of Gerontological Social Work*, 53, 366-381.
- Ragins, B.R. (2008). Disclosure Disconnects: Antecedents and consequences of disclosing invisible stigmas across life domains. *The Academy of Management review*, 33(1), 194-215.
- Riley G. (2009). *Stuttering Severity Instrument for Children and Adults-4 (SSI-4) 4th ed.* Austin (TX): Pro-Ed.
- Rosenberg, S., & Curtiss, J. (1954). The effect of stuttering on the behavior of the listener. *Journal of Abnormal Psychology*, 49(3), 255.
- Ruscello, D.M., Lass, N.J., & Brown, J. (1988). College students' perceptions of stutterers. *NSSLHA Journal*, 16, 115-120.
- Ryan, R., Kempner, K., & Emlen, A. C. (1980). The stigma of epilepsy as a self-concept. *Epilepsia*, 21(4), 433-444.
- Sacks, H., Schegloff, E. A., & Jefferson, G. (1974). A simplest systematics for the organization of turn-taking for conversation. *Language*, 50(4), 696-735.
- Sarbin, T. R. (2000). Worldmaking, self and identity. *Culture & Psychology*, 6(2), 253-258.
- Sarbin, T. R., & Scheibe, K. E. (1983). A model of social identity. In T. R. Sarbin & K. E. Scheibe (Eds.), *Studies in social identity* (pp. 5-28). New York, N.Y: Praeger.
- Sarbin, T. R., & Kitsuse, J. I. (1994). A prologue to constructing the social. In T. R. Sarbin & J. I. Kitsuse (Eds.), *Constructing the social* (pp. 1-18). London: Sage.
- Schegloff, E. A. (1987). Analyzing single episodes of interaction: An exercise in conversation analysis. *Social Psychology Quarterly*, 50(2), 101-114.
- Schegloff, E. A. (1999). Discourse, pragmatics, conversation, analysis. *Discourse Studies*, 1(4), 405-435.
- Schegloff, E. A., Jefferson, G., & Sacks, H. (1977). The preference for self-correction in the organization of repair in conversation. *Language*, 53(2), 361-382.
- Sheehan, J. G. (1953). Theory and treatment of stuttering as an approach-avoidance conflict. *Journal of Psychology*, 36(1), 27-49.
- Sheehan, J. G. (1970). *Stuttering: Research and therapy*. New York: Harper & Row.

- Shelton, J. N., Alegre, J. M., & Son, D. (2010). Social stigma and disadvantage: Current themes and future prospects. *Journal of Social Issues*, 66(3), 618.
- Smith, A., & Kelly, E. (1997). Stuttering: A Dynamic, Multifactorial Model. In R. Curlee & G. Siegel (Eds). *The Nature and Treatment of Stuttering*. Boston: Mouton de Gruyter.
- St. Louis, K. O., & Lass, N. J. (1981). A survey of communicative disorders students' attitudes toward stuttering. *Journal of Fluency Disorders*, 6(1), 49-79.
- Starkweather, C. W. (1987). *Fluency and stuttering*. Englewood Cliffs, N.J.: Prentice-Hall.
- ten Have, P. (2007). *Doing conversation analysis*. London: SAGE.
- Teshima, S., Langevin, M., Hagler, P., & Kully, D. (2010). Post-treatment speech naturalness of comprehensive stuttering program clients and differences in ratings among listener groups. *Journal of Fluency Disorders*, 35(1), 44-58.
- Tetnowski, J. & Damico, J. (2001). A demonstration of the advantages of qualitative methodologies in stuttering research. *Journal of Fluency Disorders*, 26, 17-42
- Turnbaugh, K. R., Guitar, B. E., & Hoffman, P. R. (1979). Speech clinicians' attribution of personality traits as a function of stuttering severity. *Journal of Speech and Hearing Research*, 22(1), 37-45.
- Van Riper, C. (1982). *The nature of stuttering*. Englewood Cliffs; London: Prentice-Hall.
- Von Tiling, J. (2011). Listener perceptions of stuttering, prolonged speech, and verbal avoidance behaviors. *Journal of Communication Disorders*, 44(2), 161-172.
- Westbrook, L.E., Bauman, L.J., Shinnar, S. (1992). Applying Stigma Theory to Epilepsy: A test of a conceptual model. *Journal of Pediatric Psychology*, 17(5), 633-649.
- White, P. A., & Collins, S. R. C. (1984). Stereotype formation by inference: A possible explanation for the "stutterer" stereotype. *Journal of Speech and Hearing Research*, 27(4), 567-570.
- Woods, C. L., & Williams, D. E. (1976). Traits attributed to stuttering and normally fluent males. *Journal of Speech and Hearing Research*, 19(2), 267-278.
- Yang, L. H., Kleinman, A., Link, B. G., Phelan, J. C., Lee, S., & Good, B. (2007). Culture and stigma: Adding moral experience to stigma theory. *Social Science & Medicine*, 64(7), 1524-1535.
- Yaruss, S. (1997). Clinical Measurement of Stuttering Behaviors. *Contemporary Issues in Communication Science and Disorders*, 24, 33-44.

- Yaruss, J. S., & Quesal, R. W. (2006). Overall assessment of the speaker's experience of stuttering (OASES): Documenting multiple outcomes in stuttering treatment. *Journal of Fluency Disorders*, 31(2), 90-115.
- Yaruss, J. S. & Quesal, R. W. (2010). *Overall Assessment of the Speaker's Experience of Stuttering*. Stuttering Resources Therapy, Inc.
- Yovetich, W. S., & Dolgoy, S. (2001). The impact of listeners' facial expressions on the perceptions of speakers who stutter. *Journal of Speech-Language Pathology and Audiology/Revue d'Orthophonie Et d'Audiologie*, 25(3), 145-151.

APPENDIX A:
PARTICIPANT DEMOGRAPHICS^{1,2}

Partici- pant	Current Occupation	Gender	Age	Current Therapy	Past Therapy	Current Self- help	Past Self- help
1	Grad Student	M	29	Yes	No	Yes	No
2	Retired Truck Driver	M	62	No	Yes	No	No
3	UG Student	F	19	No	No	No	No
4	UG Student	F	19	Yes	No	No	No
5	Retired IT Analyst	M	63	No	Yes	Yes	Yes
6	Speech- language pathologist	F	32	No	Yes	No	No
7	Speech- language pathologist	F	35	No	Yes	No	Yes
8	Chef	M	37	No	Yes	Yes	No
9	Realtor	M	38	No	Yes	No	Yes
10	Tech. Support Specialist	M	33	No	Yes	No	No
11	Teacher Aide	F	32	No	Yes	No	No
12	Dir. Of Billing	F	47	No	Yes	No	No
13	UG Student	M	18	Yes	Yes	Yes	No

Partici- pant	Current Occupation	Gender	Age	Current Therapy	Past Therapy	Current Self- help	Past Self- help
14	Maintenanc e	M	25	Yes	Yes	Yes	No
15	X-Ray Tech	M	43	No	Yes	No	No
16	Inform. Tech.	F	50	No	Yes	Yes	Yes
17	Grad Student	M	29	No	Yes	Yes	Yes
18	Retired College Professor	M	73	No	Yes	Yes	Yes
19	College Professor	F	57	No	Yes	No	No
20	Surgical Tech	M	33	No	Yes	No	Yes
21	Psychology Professor	M	66	No	Yes	No	Yes
22	IT Consultant	M	72	No	Yes	No	Yes
23	Casino Managemen t	M	26	No	Yes	No	Yes
24	TV Host	F	33	Yes	Yes	No	Yes
25	Examiner: U. S. SEC	M	39	No	No	Yes	No

¹ 28 participants were recruited but only 25 were included in the study. One participant was excluded due to heavily accented English preventing accurate transcription; one was excluded due to technical failures during the experiment; and one was recruited and interviewed but never reported for the experiment.

² 4/25 participants spoke fluent English as a second language

APPENDIX B:
LETTERS OF INFORMED CONSENT

TEMPLE UNIVERSITY
A Commonwealth University

College of Public Health

Weiss Hall— 265-62
Philadelphia, Pennsylvania

19122

Dear Participant:

My name is James M. Mancinelli. I am a doctoral student in the Department of Communication Sciences and Disorders at Temple University. This letter is to invite you to participate in a research project that is called *The Effects of Self-Disclosure on the Communicative Interaction between People Who Stutter (PWS) with Varying Levels of Self-Stigma and Normally Fluent Speakers (NFS) from the Perspective of the PWS*. This project is in partial fulfillment of the requirements for the PhD degree at Temple University.

The purpose of the study is to investigate the (a) role that self-disclosure status has on the communicative interaction of a person who stutters (PWS), from the perspective of PWS; and (b) the benefit the PWS receives from disclosing their stuttering to a communication partner. The goal of this project is to investigate whether a standard therapeutic practice in working with PWS, self-disclosure, is a valuable tool in the treatment of those who stutter. Through your participation in this study you may get a clearer understanding of the effects that disclosing your stuttering to other speakers may have on your comfort during communicative interactions, stuttering severity during those interactions, your speech naturalness, and the general self-perceived benefit.

You are being asked to participate in this research because you are a person who stutters. Approximately 35 PWS will be enrolled in the study. Your participation in this study will take place at the La Salle University Speech-Language Hearing Community Clinics (LSU-SLHCC). Your time commitment if you enroll in the study will be approximately 75-90 minutes and you will be scheduled at your convenience. You will be required to participate in a brief intake interview. The investigator will also administer the *Stuttering Severity Instrument—4th Edition (SSI-4)* (approximately 15 minutes). You will engage in two speech-related tasks with another speaker who does not stutter. You will be asked to complete two questionnaires; The *Stuttering Perceptions Scale* will be given to you before the first task. You will be asked to complete the second questionnaire, the *Self-Report Questionnaire*, at the end of the second task. Between the tasks, you will be taken to a sound proof booth for a hearing screening (approximately 10 minutes). Your interactions with the investigator during the intake interview and the testing with the *SSI-4* as well as during the speech tasks will be videotaped for data collection purposes.

There are no known risks to participating in the project. There are no negative consequences to participating in this research as a result of the experimental conditions. You will be enrolled in a raffle to win an iPad Mini as compensation for your time. The winner will be notified via email or

phone call.

Your participation is voluntary. You may withdraw from the study at any time. You may also be removed at any time from this study at the discretion of the investigator. All information will be kept secure and confidential. Your videotaped participation will be stored on a secure intra-net server within the LSU-SLHCC and downloaded by the investigator to encrypted Iron Keys if necessary for data analysis purposes. The data will be used in the doctoral dissertation of the investigator and for potential research and/or teaching purposes at a later date.

The records and data generated by the study may be reviewed by Temple University and its agents, the study sponsor or the sponsor's agents (if applicable), to assure proper conduct of the study and compliance with regulations. The results of this project may be published. If any data is published, you will not be identified by name.

Subject Rights and Questions

We welcome questions about the project or your participation. If you have any questions, please contact me:

James M. Mancinelli, MS CCC-SLP
 Director of Clinical Education
 Department of Communication Sciences and Disorders
 School of Nursing & Health Sciences
 La Salle University
 1900 W. Olney Ave.
 Philadelphia, PA 19141
 215-991-3597
mancinelli@lasalle.edu

If you have any questions about your rights as a research subject, you may contact the Institutional Review Board Coordinator at (215) 707-3390. The IRB Coordinator may also be reached by email: IRB@temple.edu or regular mail:

Institutional Review Board Coordinator
 Temple University Research Administration
 Student Faculty Conference Center
 3340 North Board Street – Suite 304
 Philadelphia, PA 19140

Participant's Signature

Date

Investigator's Signature

Date

Informed Consent for Participation in Research

The Effects of Self-Disclosure on the Communicative Interaction between People Who Stutter and Normally Fluent Speakers

Dear Participant:

My name is James M. Mancinelli. I am a doctoral student in the Department of Communication Sciences and Disorders at Temple University. This letter is to invite you to participate in a research project investigating conversational speech between two interactants, a person who stutters and a normally fluent speaker.

Purpose of Research

The purpose of the study is to investigate the (a) the role that self-disclosure status has on the conversational speech of a person who stutters, from the perspective of a person who stutters; and (b) the benefit the person who stutters receives from disclosing their stuttering to a communication partner. The goal of this project is to investigate whether a standard therapeutic practice in working with people who stutter, self-disclosure, is a valuable tool in the treatment of those who stutter.

Benefits

Through your participation in this study you may get a clearer understanding of the sociological aspects of your stuttering. Furthermore, you will be contributing to the research in the area of self-disclosure in stuttering since this study investigates self-disclosure from the perspective of the person who stutters which has not been studied.

Procedures and Duration

Approximately 35 people who stutter will be enrolled in the study. Your participation in this study will take place at the La Salle University Speech-Language Hearing Community Clinics (LSU-SLHCC). Your time commitment if you enroll in the study will be approximately 75-90 minutes and you will be scheduled at your convenience. You will be required to participate in a brief intake interview by phone. The investigator will also administer a brief speech evaluation (approximately 15 minutes). You will engage in two speech-related tasks with another speaker.

(initial) page 1 of 4 _____

First, the Principal Investigator will ask you to complete a questionnaire about your stuttering. You will then engage in the first conversational task. You will then complete the first questionnaire asking you questions about your conversational encounter. After you complete the questionnaire, you will be taken into another area of the La Salle University Speech-Language Hearing Community Clinics and a student in the Communication Sciences and Disorders Department will screen your hearing. This takes about 5 minutes. Once the hearing screening is completed, you will then be taken back to the experimental room and you will engage in the second conversational task. At the end of the conversational task, you will complete the second questionnaire *about* your conversational encounter. The Principal Investigator will return to the room and de-brief you. The following points will constitute the de-briefing:

1. An explanation of this particular conversational task and its origins in the research literature.
2. Your feelings about participating in this experiment.
3. Your thoughts about the conversational task that you engaged in.
4. Any ideas you may have about future improvements to similar studies in the future.

After the de-briefing, the experiment is concluded and you are free to leave. Your interactions with the investigator during the intake interview, the testing, and during the speech tasks will be videotaped for data collection purposes.

Foreseeable Risks or Discomfort

Risks or discomforts that you might experience from participating in this study are minimal. There are two foreseeable risks to the participants in this study. One foreseeable risk is the inability to sit comfortably for the duration of the Map Task (max. 5 minutes) or while filling out any documents related to the experimental protocol (max. 30 minutes). If you do exhibit unexpected discomfort while sitting, the investigator will intervene and ask if there is something that can be done to make you more comfortable without risking the experimental protocol. You can choose at that time to continue or withdraw from the study. Another foreseeable risk to a participant could be discomfort associated with stuttering so openly with a stranger; or, responding to the questions on the questionnaire due to their personal nature. If you do not wish to continue your commitment to the study, you can withdraw immediately and your participation will end at that point. Any data gathered from you—your intake form, your speech evaluation, and your questionnaires will then be discarded by shredding. Any videotaped portion of your session will be deleted from the hard drive in the computer within the La Salle University Speech-Language Hearing Community Clinics. If you would like to talk to someone about your experience as a research participant, you may contact the principal investigator.

James M. Mancinelli, MS, CCC-SLP/L, Principal Investigator
 Director of Clinical Education
 Department of Communication Sciences and Disorders
 School of Nursing & Health Sciences
 La Salle University
 1900 W. Olney Ave.
 Philadelphia, PA 19141
 215-991-3597
mancinelli@lasalle.edu

(initial) page 2 of 4 _____

You can also ask to speak with someone other than the Principal Investigator if you feel the need to discuss your experience with an objective party. You can contact a licensed psychologist, Evelyn Klein, Ph.D, who is a faculty member in the Department of Communication Sciences and Disorders at La Salle University.

Evelyn Klein, Ph.D., CCC-SLP, BRS-CL, ASHA FELLOW
 Professor
 Licensed Psychologist
 Department of Communication Sciences and Disorders
 School of Nursing & Health Sciences
 La Salle University
 1900 W. Olney Ave.
 Philadelphia, PA 19141
 215-951-1433
klein@lasalle.edu

All experimental participants who are enrolled in the study are entered into a raffle for an iPad Mini. Enrollment is defined as any subject who signs the Informed Consent form. Participants who are not enrolled in the study, who voluntarily withdraw from the study, or who are dismissed from the study are not eligible for the iPad Mini and their name will be withdrawn from the raffle. The winner will be chosen once all of the data have been collected from all experimental participants. The winner will be notified via an email or a phone call, whichever is the winner's preference.

Voluntary Participation

Your participation is voluntary. You may withdraw from the study at any time without any penalty, and this will not affect your relationship with the University, your self-help group, or any other provider. You may also be removed at any time from this study at the discretion of the investigator. All information will be kept secure and confidential. The forms and questionnaires that you complete as well as the videotape of your session will be coded so that you cannot be identified by your data. Your videotaped participation will be stored on a secure intra-net server within the La Salle University Speech-Language-Hearing Community Clinics and downloaded by the investigator to encrypted Iron Keys for data analysis purposes. An Iron Key is an encrypted flash drive with the strongest privacy protection available. The Iron Key requires a password known only to the Principal Investigator. The data will be used in the doctoral dissertation of the principal investigator and for potential research and/or teaching purposes at a later date.

Confidentiality

The records and data generated by this study may be reviewed by the doctoral committee, the relevant agents of Temple University and/or La Salle University, to assure proper conduct of the study and compliance with regulations. The results of this project may be published. If any data are published, you will not be identified by name.

(initial) page 3 Of 4 _____

All or some of your data from this experiment may be used for educational training of students in the Department of Communication Sciences and Disorders at Temple University and/or LaSalle University and your name will not be used. The data will be kept secure and confidential indefinitely for research purposes.

Contact Information

We welcome questions about the project or your participation. If you have any questions, please contact the Principal Investigator:

James M. Mancinelli
Department of Communication Sciences and Disorders
School of Nursing & Health Sciences
La Salle University
1900 W. Olney Ave.
Philadelphia, PA 19141
215-991-3597
mancinelli@lasalle.edu

To report a concern about the study or for answers to questions about your rights as a research participant, you may contact Diana Montague, Ph.D., the Chair of the Institutional Review Board at La Salle University, which is responsible for protecting individuals participating in this research project.

Diana P. F. Montague, Ph.D.
Associate Professor of Psychology
Chair, La Salle University Institutional Review Board
La Salle University
1900 W. Olney Avenue (Wister 219)
Philadelphia, PA 19141
irb@lasalle.edu

Consent Statement

I have read the above information, the procedures of the study have been explained to me, and my questions have been addressed. The information that I provide is confidential and will be used for research purposes only. I understand that my participation is voluntary and that I may withdraw at any time without penalty. If I experience any discomfort or distress related to my participation today, I am aware of the resources available to me within the Department of Communication Sciences and Disorders at La Salle University, as outlined in this form. If I have any concerns about my experience in this study, I am aware of whom I can contact. I consent to my participation in this study by signing this form and I have received a copy of this consent form.

Participant's Signature	Date
Investigator's Signature	Date

This study (IRB #15-04-021) has been reviewed and approved by the La Salle University Institutional Review Board on _____, 2015

(initial) page 4 of 4 _____

APPENDIX C:
SELF-REPORT QUESTIONNAIRES

P#: _____

Self-Report Questionnaire (Dc)

Please circle the number that reflects your experience while you were communicating with your partner in the map task.

How would you rate your stuttering while you were talking to your communication partner throughout the map task after you told them that you were a person who stutters?

1 2 3 4 5 6 7 8 9

Extremely severe stuttering

Very fluent for me

How comfortable were you talking with your communication partner?

1 2 3 4 5 6 7 8 9

Not at all comfortable

Extremely comfortable

How much were you thinking about your speech while you were talking with your communication partner during the map task after you disclosed your stuttering?

1 2 3 4 5 6 7 8 9

A great deal

Not at all

How anxious were you while you were talking with your communication partner during the map task after you disclosed your stuttering?

1 2 3 4 5 6 7 8 9

Extremely anxious

Not anxious at all

Do you feel that there was any benefit to disclosing that you are a person who stutters to your communication partner at the outset of the Map Task?

1 2 3 4 5 6 7 8 9

No benefit

A significant benefit

TOTAL POINTS _____

Thank you!

P#: _____

Self-Report Questionnaire (NDc)

Please circle the number that reflects your experience while you were communicating with your partner in the map task.

How would you rate your stuttering while you were talking to your communication partner throughout the map task?

1 2 3 4 5 6 7 8 9

Extremely severe stuttering

Very fluent for me

How comfortable were you talking with your communication partner?

1 2 3 4 5 6 7 8 9

Not at all comfortable

Extremely comfortable

How much were you thinking about your speech while you were talking with your communication partner during the map task?

1 2 3 4 5 6 7 8 9

A great deal

Not at all

How anxious were you while you were talking with your communication partner during the map task?

1 2 3 4 5 6 7 8 9

Extremely anxious

Not anxious at all

Do you feel that there was any benefit to not disclosing that you are a person who stutters to your communication partner at the outset of the Map Task?

1 2 3 4 5 6 7 8 9

No benefit

A significant benefit

TOTAL POINTS _____

Thank you!

APPENDIX D:
INFORMATION GIVER (IG) AND INFORMATION FOLLOWER (IF) MAPS

IG-1

IF-1

IG-2

IF-2

APPENDIX E:
INDIVIDUAL DATA FOR DcQ5 (BENEFIT) AND NDcQ5 (BENEFIT)

Participant	Q5Dc Condition	Q5NDc Condition
1	9.00	1.00
2	5.00	5.00
3	8.00	9.00
4	7.00	5.00
5	7.00	1.00
6	1.00	7.00
7	8.00	2.00
8	7.00	7.00
9	1.00	4.00
10	6.00	8.00
11	8.00	9.00
12	1.00	1.00
13	7.00	5.00
14	6.00	3.00
15	8.00	1.00
16	7.00	5.00
17	1.00	1.00
18	9.00	3.00
19	7.00	8.00
20	1.00	1.00
21	1.00	1.00
22	2.00	2.00
23	3.00	7.00
24	5.00	5.00

Participant	Q5Dc Condition	Q5NDc Condition
25	1.00	3.00

APPENDIX F:

Individual Raw Data on the Dependent Variables TSYLL, PSS, AND TWC across Conditions

Participant	PSSR	TSyllDc	PSSDc	TWCDc	TSyllINDc	PSSNDc	TWCNDc
1	3.52	258.00	13.18	212.00	241.00	8.30	227.00
2	4.60	302.00	4.64	245.00	469.00	1.92	390.00
3	1.63	189.00	2.12	149.00	235.00	1.70	185.00
4	4.61	371.00	3.50	317.00	349.00	5.73	284.00
5	1.08	460.00	7.83	368.00	412.00	7.52	326.00
6	.00	535.00	.56	419.00	486.00	.00	389.00
7	1.36	275.00	3.64	221.00	346.00	1.73	273.00
8	3.52	341.00	9.68	265.00	239.00	8.37	200.00
9	15.45	383.00	8.88	315.00	276.00	10.14	231.00
10	3.52	302.00	6.62	243.00	252.00	7.94	203.00
11	2.71	290.00	4.79	221.00	212.00	4.72	171.00
12	21.68	283.00	25.80	230.00	461.00	26.25	357.00
13	2.44	369.00	7.86	305.00	344.00	6.98	284.00
14	4.34	223.00	14.80	173.00	268.00	16.79	211.00
15	3.52	809.00	3.46	633.00	841.00	2.38	694.00
16	1.63	517.00	1.93	426.00	395.00	4.81	344.00
17	2.71	631.00	5.39	518.00	452.00	3.76	376.00
18	1.08	546.00	3.11	446.00	465.00	2.15	390.00
19	3.25	525.00	3.43	433.00	664.00	3.01	553.00
20	18.43	507.00	21.89	409.00	407.00	18.43	326.00
21	1.36	468.00	3.00	375.00	643.00	2.02	556.00
22	2.17	466.00	2.79	373.00	315.00	3.17	256.00
23	11.38	328.00	6.10	261.00	349.00	6.30	283.00
24	.54	556.00	2.88	467.00	546.00	1.10	437.00
25	1.90	1012.00	3.75	891.00	884.00	3.62	724.00

APPENDIX G:

GLOSSARY OF TERMS PERTINENT TO THE SOCIOLOGY OF STUTTERING

emergent phenomenon	Any real world phenomenon that results from a confluence of factors interacting with each other, implying complexity. Stuttering as a phenomenon demonstrates this concept.	Mitchell (2009)
talk-in-interaction	This term refers to the object of study in conversational analysis (CA) and developed out of Goffman's theories on social interaction. It is meant to capture the concept that the talk in a social interaction provides information about how the interaction is organized and its features. It refers to forms of talk such as conversation, interviews, courtroom proceedings, depositions, and reportage. It is the talk of everyday life.	Sacks et al. (1974); Schegloff, 1987; Psathas (1995); ten Have, (2007).
managing information	This refers to the process of divulging information about oneself, how much to divulge, what to divulge, and/or	Goffman (1963)

	when to divulge it during a social interaction.	
discreditable	This refers to the <i>undisclosed status</i> of a stigmatized person. That is, there is the <i>potential</i> for the stigma to be discovered.	Goffman (1963)
discredited	This refers to the <i>disclosed status</i> of a stigmatized person. The stigma is publicly known and/or acknowledged.	Goffman (1963)
social identity	The identity constructed through social interaction. It allows for the consideration of stigma in the daily life of a PWS.	Goffman (1963)
personal identity	The identity that allows a stigmatized person to manage information during the interaction about their stigma. This is idiosyncratic to each individual.	Goffman (1963)
ego identity	This identity allows for the consideration of what an individual feels about their stigma and its management during an interaction.	Goffman (1963)

virtual identity	This is the identity of an individual that one anticipates/expects in a social interaction, e.g., a fluent speaker.	Goffman (1963)
actual identity	This is the identity of an individual that one experiences during a social, e.g., a PWS.	Goffman (1963)
covering	The methods used by a stigmatized person to prevent disclosing their stigma. A PWS uses word avoidance or even silence.	Goffman (1963)
disclosing	When a stigmatized person openly displays their stigma in social settings.	Goffman (1963)
partitioning	<p>This describes the process whereby a stigmatized person separates his daily reality into three distinct settings:</p> <ol style="list-style-type: none"> 5. <i>Forbidden places</i> are those places where exposing the stigma will cause expulsion from that situation. 6. <i>Civil places</i> are those places where he is accepted as a stigmatized person, although 	Goffman (1963)

	<p>some may feel uncomfortable.</p> <p>7. <i>Back places</i> are those places where the stigmatized individual can safely and comfortably be himself.</p>	
--	---	--