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Development of a scale to measure parents' perceptions of their children's self-concept

by

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Abstract

To more fully understand the impact of stuttering on preschoolers' self-concept, we need to know how to validly and reliably measure these constructs. The purpose of this study was to develop a parent version of the Self-Description Questionnaire for Preschoolers (SDQP-P). Participants were 104 parents of typically fluent preschoolers (3;0-5;0). An exploratory factor analysis revealed a six factor structure: three factors consistent with earlier research (Physical Abilities, Physical Appearance, and Peer Relationships) and three new factors (Child- and Parent-initiated Parent Relationship factors, representing a split of the earlier found Parent Relationship factor, and Pre-academic Skills, representing the collapse of the earlier found Math and Verbal subscales). Measures of internal consistency for the factor subscales ranged from .52 to .81 and test-retest reliabilities ranged from .43 to .83. Findings of this pilot study indicate that future research to establish the validity and reliability of the SDQP-P is warranted.

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Chapter 1: Introduction

Background

Stuttering is a speech disorder that disrupts the forward flow of speech (Guitar, 2010). It is characterised by speech repetitions (e.g., m-m-m-mom, or mom-mom-mom-mom can I go?), sound prolongations (e.g., mmmmmom), and complete speech blockages. Stuttering invites teasing and other negative social consequences and has the potential to affect self-esteem and optimism in life orientation in school-age children and adolescents and adults (Blood et al., 2011; Langevin, 2009; Langevin, Botnick, Hammer, & Wiebe, 1998; Langevin & Hagler, 2004; Langevin, Kleitman, Packman, & Onslow, 2009).

Stuttering also has the potential to seriously affect the psychological, emotional, and social well-being of preschoolers. Current research suggests that children as young as 2 to 3 years old become aware of and react negatively to their stuttering (Boey et al., 2009; Ezrati-Vinacour, Platzky, & Yairi, 2001; Langevin, Packman, & Onslow, 2009, 2010), with such awareness being fully reached by 5 years. Preschool and kindergarten children who stutter also have been found to have more negative attitudes toward their speech than typically fluent peers (Ezrati-Vinacour et al., 2001; Vanryckeghem, Brutten, & Hernandez, 2005). As well, children as young as 2 years of age can be aware of parent reactions to their stuttering (Boey, et al., 2009).

In addition to developing negative attitudes toward their own speech, stuttering has the potential to affect a child's social interactions. Langevin, Packman and Onslow (2009, 2010) studied the social impact of stuttering by

analyzing peer responses to stuttered utterances and by surveying parents of preschoolers who stutter. Regarding peer responses to stuttered utterances, Langevin et al. (2009) found that although the majority of peer responses were positive, stuttering elicited a variety of negative responses. For example, peers responded to stuttered utterances with confusion, interrupting, mocking, walking away from, or ignoring the utterance. Stuttering also was found to affect other social interactions; participants had difficulty leading peers in play, participating in pretend play, and resolving conflict. Thus, it is not surprising that parents of preschool children who stutter also reported that stuttering caused their child to lose self-confidence and self-esteem (Langevin, Packman, & Onslow, 2010).

Stuttering usually begins in the preschool years (Bloodstein, 1995; Bloodstein & Bernstein Ratner, 2008; Yairi & Ambrose, 1992) and affects between 5% (Mansson, 2000) and 8.5 % (Reilly et al., 2009) of preschool children. Although between 79% and 84% of children who begin to stutter are reported to recover from stuttering without treatment (Andrews & Harris, 1964; Kloth, et al., 1999; Mansson, 2000; Riley & Riley, 1999; Yairi & Ambrose, 1999), we cannot predict which individual child will or will not recover from stuttering. In addition, it is important to note that the reported recovery rates are from population studies and do not reflect recovery rates of children who are brought to the clinic. Indeed, estimates of recovery from clinical caseloads have ranged from 30% to 50% (Onslow, Harrison, & Jones, 1993).

Making the decision about whether to begin treatment or wait for a period to see if natural recovery will occur is one of the most challenging decisions

related to early stuttering intervention, particularly in view of the potential for negative psychological, emotional, and social consequences. In making recommendations for timing of intervention, speech-language pathologists (SLPs) are advised to consider a number of factors. These include the severity of disfluency behaviours, age of onset of stuttering, time since onset, the child's awareness of stuttering, family history of stuttering and recovery from stuttering (Yairi & Ambrose, 2005). More recent empirical research also suggests that SLPs need to consider parent distress and child distress in terms of the psychological, emotional, and social impact of stuttering on the child (Langevin et al., 2009, 2010). This includes the effects of stuttering on children's self-confidence and self-esteem.

Few studies have specifically focussed on the effects of stuttering on self-esteem or self-confidence in children and those that have only relate to school-age children and youth who stutter. Although Blood and Blood (2003) found no statistically significant difference in self-esteem between adolescents who do and do not stutter, they found that adolescents who were at risk for bullying had lower self-esteem regardless of fluency. Blood et al. (2011) found lower self-esteem and a less optimistic life orientation in high school students who stuttered than in those who did not stutter. In a study with school-aged children, Yovetich, Leschied and Flicht (2000) found that mean scores (and standard deviations) of self-esteem of stuttering children were similar to those of a normative sample, however, Yovetich and colleagues suggested that this may have been due to sample characteristics in that participants were children who had not yet reached

fully-developed stuttering with the characteristic hallmarks of distinct emotional reactions. To date, we are only aware of an ongoing study of self-esteem in preschoolers who stutter undertaken by Langevin and colleagues (M. Langevin, personal communication, March 3, 2012).

In order to more fully understand and measure the impact of stuttering on preschoolers' self-esteem and self-confidence, we need to know how to validly, reliably, and comprehensively measure these constructs in preschoolers with the least study burden on children and parents. In particular, in order to reduce study burden on families, we need to know if preschooler's self-esteem and self-confidence can be reliably and validly measured by parent ratings, or whether parent and child reports are both needed. In order to answer this question, a parent measure of these constructs is needed.

Defining and Measuring Self-Esteem and Self-Confidence, and its Relationship to the Broader Construct of Self-Concept

Overlap in the literature. A literature search revealed the existence of instruments that purport to measure self-esteem in preschoolers. Measures included The Self-Social Constructs Test – Self Esteem Scale (Long, Ziller, & Henderson, 1969), the Brown IDS Self-Concept Referents Test (Brown, 1966), the Maryland Preschool Self-Concept Scale (Smith, 1978), the Preschool and Primary Self-Concept Scale (Stager & Young, 1982), the I Feel-Me Feel (White & Human, 1976), and the Thomas Self-Concept Values Test (Thomas, 1969). Despite the fact that the term *self-confidence* is commonly used and understood in everyday language, no measures of self-confidence per se in preschoolers could

be found. Rather, it was noted that there appears to be an overlap in the constructs of self-esteem and self-confidence in the literature and that these constructs are dimensions of an overarching construct of self-concept.

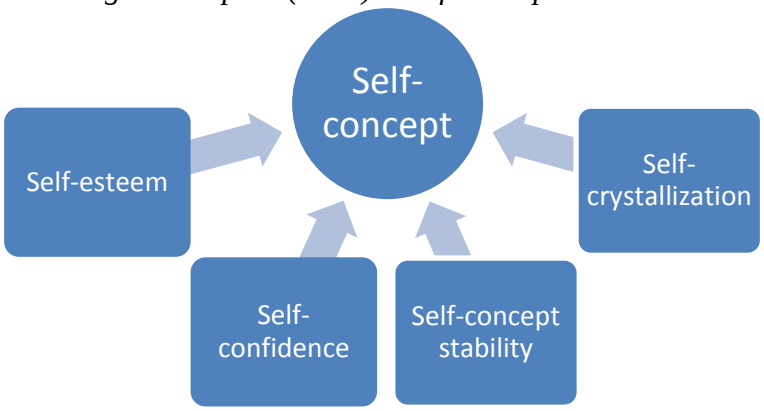
Unidimensional and multidimensional views. In the current literature, *self-esteem* has been viewed as a unidimensional and multidimensional construct. With regard to unidimensional views, the construct of self-esteem is "the integrated sum of self-confidence and self-respect" (Branden, 1969, p. 104). Branden (1969) distinguished self-esteem from self-confidence in that self-esteem is "a judgment passed on one's knowledge or special skills", whereas self-confidence is "a judgment passed on that which acquires knowledge and skills" (p. 106). In contrast, Rosenberg and Kaplan (1982) noted that self-confidence and self-esteem are entirely distinct concepts in which self-confidence can contribute to self-esteem.

In terms of the multidimensional views, Buss (2001), Harter (1982), Marsh, Ellis, and Craven (2002), and Mruk (2006) view self-esteem as the evaluation of confidence and feelings of self-worth. Mruk (2006) identified several sources of self-esteem that reflect both competence (i.e., achievements/failures, competence, influence/powerlessness) and affective components (i.e., acceptance/rejection, virtue/guilt, and worthiness). Buss (2001) indicated that the evaluation of *confidence*, the competence component, includes issues of appearance, ability and power; and the evaluation of *self-worth*, the affective component, includes issues of interaction with others and character.

In an alternative model, Rosenberg and Kaplan (1982) suggested that *self-esteem* and *self-confidence* are part of a structure known as self-concept, which also consists of *self-concept stability*, and *self-crystallization* (as depicted by Figure 1). In this context, self-esteem refers to the acceptance and respect of one's own intelligence. Self-concept stability refers to the stability or variability of one's own intelligence. Self-confidence refers to one's certainty of success in intellectual tasks. Self-crystallization refers to the degree to which a person's "idea about their type and level of intelligence" is "clearly defined and firmly structured" (Rosenberg & Kaplan, p. 3). It is possible that Rosenberg and Kaplan's definition of self-concept explains the inter-relatedness and thus, the interchangeability of the self-esteem, self-confidence, and self-concept terms that is sometimes found in the literature.

Figure 1

Rosenberg and Kaplan (1982)'s self-concept schema



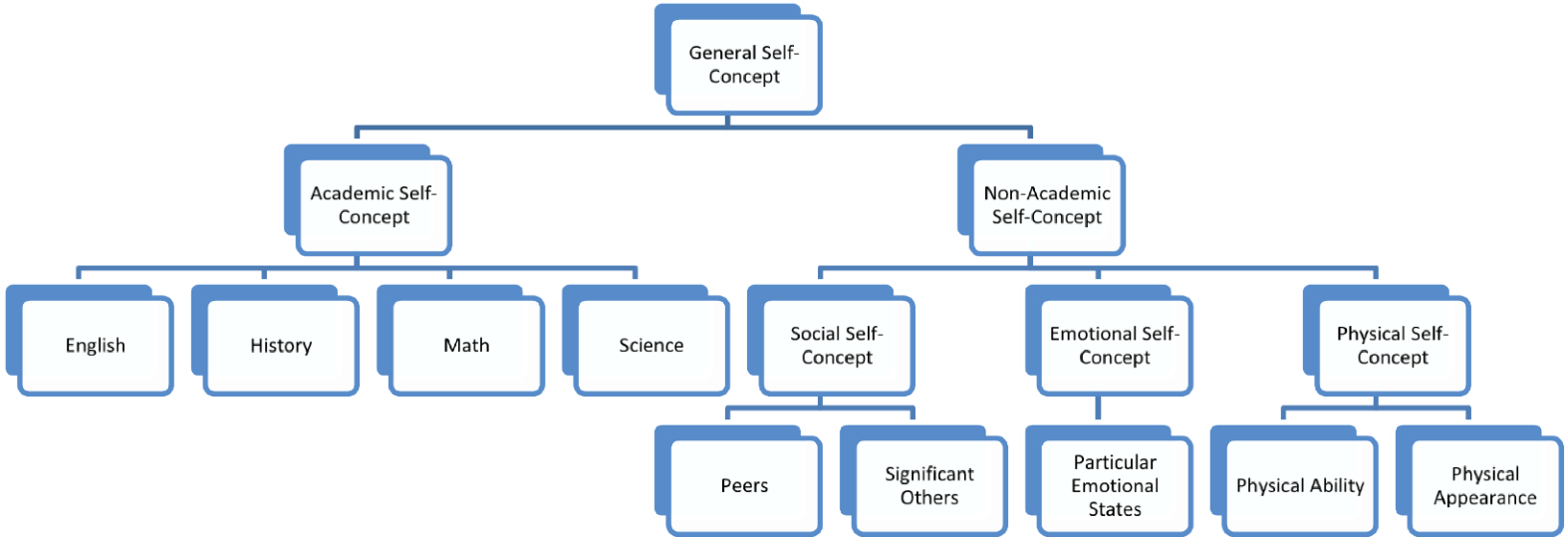
In short, self-concept appears to be a general overarching construct that includes dimensions of both self-esteem and self-confidence. It therefore appears that in order to measure self-esteem and self-confidence and to keep study burden to a minimum, a measure of self-concept would be the measure of choice.

Furthermore, self-concept scales are shown to render accurate and meaningful concepts of self in young children. Eder (1990) established that children as young as three and a half years old have meaningful and consistent psychological concepts of themselves.

Regarding investigations of the dimensionality of the construct of self-concept, Marsh et al. (2002) conducted a study to empirically identify the multidimensional nature of self-concept in preschoolers as measured by a questionnaire they developed called the Self-Description Questionnaire for Preschoolers (SDQP). The SDQP was based on Shavelson, Hubner, and Stanton's (1976) multidimensional, hierarchical model of self-concept (Figure 2) that includes academic and non-academic constructs. The SDQP is comprised of four non-academic self-concept factor subscales, physical ability, physical appearance, peer relationship, and parent relationship, and two academic self-concept factor subscales, verbal and math abilities. The SDQP is a 38-item scale. Examples of items measuring each of the six dimensions are as follows: "Can you run fast?" (physical ability), "Do you like the way you look?" (physical appearance), "Do you have lots of friends?" (peer relationship), "Do you have lots of fun with your parents?" (parent relationship), "Do you enjoy listening to stories?" (verbal) and , "Are you good at counting?" (math).

Figure 2

Shavelson et al.'s (1976) multidimensional, hierarchical model of self-concept



Currently published self-concept scales. A further literature search for self-concept scales that could be used with preschoolers revealed the existence of many scales, however, most were psychometrically weak (Wylie, 1969) and none had compatible parent versions. The SDQP appeared to have the most favourable psychometric properties, suggesting that it would be the instrument of choice to measure self-concept in preschoolers and thus the instrument of choice for which to develop a parent version.

In the process of selecting the SDQP as the measure of choice for this study, an extensive evaluation of existing self-concept scales was undertaken. The dimensions of these scales were evaluated by means of an item by item analysis and a comparison to the dimensions of self-concept on the SDQP (see Table 1). Following is a discussion of the dimensions of the reviewed scales and the comparison to the SDQP, the response options of the reviewed scales, and the psychometric properties of the scales.

Self-concept dimensions measured. The Thomas Self-Concept Values Test (TSCVT; Thomas, 1969; Landry, Schilson, & Pardew, 1974) comprises 14 items described as value dimensions of social experience: happiness, physical size, sociability, ability, sharing, male acceptance, fear of things, fear of people, strength, cleanliness, health, attractiveness, material possessions, and independence. The child is first photographed to ensure that the child is referring to himself when answering the 14 questions. The items are orally presented as alternate-choice questions, for example "Is Johnny happy or is he sad?", with 'Johnny' being the name of the child being tested. The four referents used to elicit

responses are the child himself (e.g., “Is Johnny….?”), his mother (e.g., “Does Johnny’s mother think that he is…?”), his teacher (e.g., “Does Johnny’s teacher think that he is…?”) and his peers (e.g., “Do other kids in Johnny’s class think that Johnny is...?”). Scores are summed for each of the 14 self-value items, the four self-concept referent scores, and an overall self-concept score.

The Pictorial Scale of Perceived Competence and Social Acceptance (PSPCSA; Harter & Pike, 1984) is designed to measure two general constructs of perceived competence (measured by cognitive and physical competence subscales) and perceived social acceptance (measured by the peer and maternal acceptance subscales). Each subscale comprises 6 items, for a total of 24 items. A double binary response system is used. The child is shown a picture and is read a brief statement about each child depicted. The first binary response is to indicate which of the two children in the picture the child is most like. The second binary response is to indicate whether the child is “a lot” or “a little bit” like the child in the picture. Items are scored on a four-point scale, where “4” is most competent or accepted and “1” is least competent or accepted. Scores are averaged for each subscale, and these scores form the perceived competence and social acceptance profile.

Similar to the TSCVT, the Brown IDS Self-Concept Referents Test (Brown-IDS; Brown, 1966) comprises of 14 orally presented, alternate-choice questions. The 14 items are happiness, cleanliness, good-looking, enjoyment of playing with other kids, material possessions, goodness, talkativeness, intelligence, fear of things, fear of people, clothes, strength, health, and liking his face. The

child is first photographed to ensure that the child is referring to himself when answering the 14 questions. Items are scored as "1" for the more socially desirable choice, and "0" for the less socially desirable choice. The child is asked the questions from the point of view of four referents: the child himself, his mother, his teacher, and his peers. Scores are summed for each of the four self-concept referents, and a combined "mother plus teacher plus other kids referent score".

Although the Piers-Harris-2 (PH-2; Piers & Herzberg, 2005) was developed for school-age children, it was included in this analysis because this scale showed excellent psychometrics and has been used extensively in research. The PH-2 is a 60-item test that measures six dimensions of self-concept: Behavioural Adjustment, Intellectual and School Status, Physical Appearance and Attributes, Freedom from Anxiety, Popularity, and Happiness and Satisfaction. The scale can be administered by asking the child to fill it out independently or by reading the questions to the child. A binary ("yes" or "no") response system is used. Scores are summed for each of the self-concept dimensions, as well as a total score summed across each dimension.

Response options. With regard to response options, the SDQP and the PSPCSA both use double binary responses. The TSCVT and the Brown-IDS both use alternate-choice questions. The PH-2, developed for school-aged children, uses an independently administered, binary response system. The double binary response system appears to be the most appropriate because the two-step response

system guides the child in providing more specific responses than binary response systems and alternate-choice questions.

Item by item analysis. With regard to the dimensions measured in the SDQP as compared to the other available self-concept scales, an item by item analysis was performed. As shown in Table 1, all dimensions measured in the SDQP were found to be common to the other self-concept scales considered, either in terms of dimensions or items reflective of dimensions. To illustrate this commonality, examples of items for each dimension on the SDQP and a comparable item from one of the other self-concept scales are described. The following discussion compares items from each of the six SDQP subscales (i.e., peer relationships, physical appearance, physical ability, verbal, math, parent relationship) with items from the other self-concept scales.

In the SDQP two items that measure *peer relationships* are "Do you have lots of friends?" and "Do other kids ask you to play with them?" These are similar to the following: "Sociability" in the TSCVT, "Has lots of friends" and "Gets asked to play with others" in the PSPCSA, "Likes to play with other kids" in the Brown-IDS, and "I have many friends" in the PH-2.

Two items in the SDQP that measure *physical appearance* are "Do you have a nice looking face?" and "Are you good looking?" These are similar to "Attractiveness" in the TSCVT, "Good looking" and "Likes the way my face looks" in the Brown-IDS, and "I am good-looking" and "I have a pleasant face" in the PH-2. In addition to good looks, the SDQP makes the distinction of liking the

shape of one's body ("Do you like the size and shape of your body?"), which is similar to the item of "Physical size" in the TSCVT.

In terms of *physical ability*, two items in the SDQP that measure this dimension are "Can you run fast?" and "Can you run a long way without stopping?" These are similar to "Ability" in the TSCVT and "Good at running" in the PSPCSA.

In terms of *math* and *verbal abilities*, three items in the SDQP that measure this dimension are "Are you good at counting?", "Are you good at reading?", and "Do you know lots of letters of the alphabet?" These are similar to "Knows alphabet" and "Good at counting" in the PSPCSA, and "I am a good reader" in the PH-2.

In terms of *relationships with parents*, three items in the SDQP that measure this dimension are "Do you enjoy doing things with your parents?", "Do your parents smile at you a lot?", and "Do you like talking to your parents?" These are similar to "Mom takes you places you like", "Mom smiles", "Mom plays with you", "Mom reads to you", and "Mom talks to you" in the PSPCSA.

Items measured by the SDQP that are not included in other scales include items that compare self to peers (e.g., "Are you better looking than most of your friends?"), items that ask whether the child likes his peers, parents and activities (e.g., "Do you like to run and play hard?"), and items that ask if the child thinks others like him (e.g., "Do your parents like you?"). Given that the above definition of self-concept describes self-concept as an overarching construct involving self-esteem that reflects a judgment of one's knowledge or special skills,

a child's comparison of himself to his peers is a reflection of his self-esteem, as is a child's judgment on whether or not others like him. Given that self-confidence is defined as a judgment regarding how one acquires knowledge and skills, a child's judgment of whether or not he likes his peers, parents, and activities reflect his ability to acquire knowledge or skills and thus are measures of the child's self-confidence. Thus, items measured by the SDQP, but not included in other scales, reflect a child's overarching self-concept, including aspects of self-esteem and self-confidence.

Finally, the item by item comparison revealed that the SDQP did not include the following dimensions that were measured by the other scales: fear of things and people (TSCVT, Brown-IDS), freedom from anxiety (PH-2), cleanliness (TSCVT, Brown-IDS), and material possessions (TSCVT, Brown-IDS). Inclusion of freedom from anxiety in the PH-2 for school-age children and not the scales for preschoolers suggested that it was a concept that would be more salient for older children and adolescents. Thus it was not added to the SDQP-P in this study. Although cleanliness and material possessions were thought to be concepts to which a preschooler would be able to relate, they did not fit in Shavelson et al.'s (1976) definition of self-concept upon which the SDQP was based; thus these items were not included in the SDQP-P as additional items. Given that fear of things and people could reflect "particular emotional state" in the model of Shavelson and colleagues, the fear items from the TSCVT and Brown-IDS scales were included as additional items to determine whether they should be included in future development of the SDQP-P.

Psychometric properties. With regard to psychometric properties, as shown in Table 1, the SDQP and the PH-2 appear to have the strongest psychometrics. The SDQP, PH-2, and the PSPCSA showed the strongest internal consistencies. Factor analyses were also performed on these scales. The SDQP and the PH-2 were found have six factors. In contrast, the PSPCSA was found to have two factors that grouped subscales similar to those in the SDQP and PH-2 into the broader categories of "Competence" and "Acceptance". Convergent validity with measures of anger and aggressive attitudes, and measures of psychological symptoms were also performed for the PH-2.

Inferred self-concept measures. Parent versions of self-concept measures for young children are needed to determine self-other agreement (i.e., how accurate self-concept can be measured by an external observer; see Marsh & Craven, 1991) and to determine if study burden can be reduced by measuring parent-inferred self-concept only. Of the self-concept measures for preschoolers reviewed above, only the PSPCSA explored the development of an inferred version of the scale; however, the external observers were teachers rather than parents as in this study. The mean correlation between child and teacher ratings was moderate (.24); teacher-child correlations for individual dimensions were also moderate (.37, .30) for cognitive and physical competence, and negligible (.06) for social acceptance (Harter and Pike, 1984).

Table 1

Comparison of dimensions on the SDQP and dimensions or items reflective of dimensions of other self concept measures

	SDQP	TSCVT	PSPCSA	Brown-IDS	PH-2*
Dimensions of self-concept measured					
1.	Peer relationships	Sociability	Peer acceptance	Likes to play with other kids-doesn't like to play with other kids	Popularity
2.	Physical appearance	Attractive-ness	--	Good looking-ugly	Physical appearance and attributes
		Attractive-ness	--	Likes the way (my) face looks-doesn't like the way (my) face looks	Physical appearance and attributes/ Happiness
		Physical Size	--	--	Physical appearance and attributes
3.	Physical ability	Ability	Physical competence	--	--
4.	Verbal	--	Cognitive competence	--	Intellectual & school status
	Math	--	Cognitive competence	--	--
5.	Parent relationship	--	Maternal acceptance	--	--
Psychometric properties					
a.) Internal consistency	.75-.89	.73	.88	.72	.91
b.) Exploratory factor analysis	--	--	Two factor model: competence and acceptance	--	Six factor model
c.) Confirmatory factor analysis	Six factor, a priori factor structure	--	--	--	--

d.) Convergent validity	--	--	--	--	Against measures of anger and aggressive attitudes, and measures of psychological symptoms

Note: The PH-2 is designed for older children, aged 7-18. A dash indicates that the scale did not include the subscale that was included in the other measures.

With regard to school-age children, a parent version of the SDQI was developed, reporting stronger correlations than those found by Harter and Pike for child-teacher; correlations ranged from .26 to .56 (mean = .44) for mother-child ratings, .13 to 62 (mean = .43) for father-child ratings, and .27 to .62 (mean = .46) for teacher-child ratings (Marsh & Craven, 1991). Marsh and Craven indicated that their findings suggested that there was "reasonably" good agreement between parent and child ratings of self-concept and that parent and child agreement appeared more valid than teacher-child ratings. These results suggest that research into parent-inferred self-concept in preschoolers is warranted.

Purpose of the Present Study

The purpose of this study was to develop a parent version of the SDQP, which we will refer to as the Self-Description Questionnaire for Preschoolers – Parent (SDQP-P), and to evaluate its factor structure, internal consistency, and test-retest reliability. Although the initial aim of this study was to develop an SDQP-P for parents of typically fluent children and parents of children who stutter (as is evident in the introduction and the initial recruitment documents), time constraints required that the study be scaled back to a pilot investigation focussing on development of the scale with parents of typically fluent children.

From a scale development point of view, investigation with parents of typically fluent children only is a logical first step and will provide the foundation for the next stage in development of the scale and a comparison of parent's perception of self-concept in preschoolers who stutter as compared to parents of typically fluent children.

In the long-term, results of this study will contribute to the further development of the SDQP-P for parents of children who stutter and ultimately measurement of self-concept in children before and after stuttering treatment. At present it is unknown whether children who stutter regain self-esteem and self-confidence after stuttering treatment. In addition, results of this study will be broadly applicable to the measurement of self-concept in children with other speech and language disorders. In particular, results of this study will lead to future research to determine whether parent ratings of children's self-concept are sufficiently similar to those of their children to warrant use of a parent scale only to reduce study in burden on preschoolers.

Chapter 2: Methods

Design

This study used a prospective, single group study.

Participants

Participants were 104 parents of children who ranged in age from 3;0 to 5;11 years (M = 4 years, 3 months, SD = .86). Respondents represented 87% of the total of 119 parents who were sent the online or paper version of the questionnaire. Inclusion criteria for parents of typically fluent children were the absence of stuttering and other speech disorders, language disorders, hearing impairments, and cognitive and behavioural difficulties other than mild articulation or phonological disorders in their children. Children with co-existing mild articulation or phonological disorders were included in the group of typically fluent children to allow for future comparison to children who stutter; between 44% and 47% of children who stutter have co-existing speech and language disorders (Wevrick & Mervyn, 1999; Arndt & Healey, 2001). Eighty-nine parents had children with no speech or language disorders, 7 had children with mild articulation delay only, 4 had children with mild phonological delay only, and 4 had children with both mild articulation and phonological delays. Responses from 11 parents were excluded due to the children being younger than 3 and not meeting other inclusion criteria. Twenty-nine participants representing 28% of the entire sample completed a second questionnaire 1 week after completing the first questionnaire comprising the test-retest subsample.

Recruitment and Confidentiality

Parents of typically fluent children were recruited by word of mouth and snowballing procedures, and through advertisements (Appendix A) placed in preschools in urban and rural areas across Canada. A letter of invitation (Appendix B) and an information sheet (Appendix C) were given personally or emailed to parents who indicated interest in the study. To ensure anonymity, returned questionnaires were given a numerical code that was automatically generated by the computerized survey system. The number represents the order in which the completed questionnaires were submitted. All other identifying information (e.g., first name, surname, address, telephone number, email, age of child) were removed from the returned questionnaires.

Sixty-one participants completed the survey online after being recruited by word of mouth or by responding to the poster advertisements, 42 participants submitted paper copies of the survey after being approached at the local library, and 1 participant submitted a paper copy that was hand delivered to a preschool.

Procedures

Self-Description Questionnaire for Preschoolers – Parent (SDQP-P). The SDQP-P (Appendix D) is a 38-item scale that measures parents' perceptions of their child's self-concept. Items on the SDQP were converted to the third person to reflect inferred self-concepts (Marsh & Craven, 1991). For example, the item "I am good-looking" was changed to read "My child thinks he/she is good-looking". This conversion was previously done by Dr. Marilyn Langevin and

reviewed by Dr. Rhonda Craven, developer of the preschooler version of the SDQP.

Two additional items that reflect dimensions not previously included in the SDQP-P as revealed by the item by item comparison with other self-concept scales were added. These items are "My child thinks he/she is scared of a lot of people" and "My child thinks he/she is scared of a lot of things". As indicated previously, fear of people and things appears to be an important aspect of self-concept in a preschooler.

Consistent with the SDQP, a double binary response system was used. The first binary response option was "Yes" or "No". The second binary response provided qualifier responses of "sometimes" or "always". For example, if the parent answered "Yes" to a question, then the parent needed to specify "Yes sometimes" or "Yes always." The same format was used if the answer was "No". Responses were scored as follows: "No always" = 1, "No sometimes" = 2, "Yes sometimes" = 4, "Yes always" = 5. If the parent could not state a "Yes" or "No", a 3 was recorded. Scores were summed for each self-concept dimension. The higher the score, the more positive is the child's self-concept.

Administration procedures. The Tailored Design Method (TDM; Dillman, 2009) is a set of procedures for conducting successful self-administered surveys claiming to produce quality responses and response rates of 70% or higher. It emphasizes respondent trust, perceptions of increased rewards and reduced costs for the respondent, and reduces survey error. Key principles of the TDM that were used for this study included making the survey respondent-

friendly, providing a financial incentive, using five varied contacts with recruited parents, and personalizing correspondence.

In order to make the survey respondent-friendly, respondents had the option of completing the survey online or to print out the survey and complete it manually. The questions were clear and concise to ease respondents' understanding of the questions. Correspondence was also personalized by encouraging participants to contact the researchers by phone or personal email. A prize draw for an iPad, and an iPad mini for the retest subsample, was offered to compensate participants for taking the time to complete the questionnaires.

A five-point contact method was used with parents who were recruited for on-line participation, the first contact being the advertisement, the second contact being the initial email and survey link sent to parents who responded to the advertisement, the third, fourth, and fifth contacts being email reminders for those who had not yet completed the survey. The email reminders were sent a week apart, until either the participant submitted the survey or 3 weeks after the initial email had been sent. One week following the completion of the first questionnaire, participants were invited to complete a second retest questionnaire. The same five-point contact method was used for the retest sample. Recruitment of retest participants continued until 28% of the sample was achieved.

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Chapter 3: Data Analysis

The validity of the parent form of the Self-Description Questionnaire for Preschoolers (SDQP-P) was examined using an exploratory factor analysis. According to Kline (2000) and Gorsuch (1983), a sample size of 100 meets the minimum required for a factor analysis. Reliability was tested using measures of internal consistency and test-retest reliability.

Missing Data

Fewer than 0.6% of the data were missing; the missing data were spread evenly over the subscales and number of items. Since the missing data can be considered to have occurred at random, the missing data were imputed using the series mean (IBM Corp., 2011).

Exploratory Factor Analysis

Exploratory factor analyses were run to discover the factor structure of the SDQP-P. Exploratory factor analyses were performed with SPSS 20.0 (IBM Corp., 2011) using varimax rotation based on 5 responses ("no always", "no sometimes", "yes always", "yes sometimes", and "cannot state yes or no"). We hypothesized that a six factor structure, comprised of Physical Abilities, Physical Appearance, Peer Relationship, Parent Relationship, Math, and Verbal factors, that is consistent with that found in the children's version of the SDQP would be the best fit for the data. Consistent with previous self-concept research with school-aged children and as recommended in the SDQI test manual (e.g., Marsh, 1990; Marsh et al., 2002; Marsh, Craven, & Debus, 1991, 1998), the initial exploratory factor analysis was conducted on 19 item-pair scores or parcels (Table 2). Items were

calculated by averaging the first two items in a subscale to form the first item-pair score, averaging the next two items to form the next item-pair score, and so on. Thus, the 6 or 8 items on each subscale formed 3 or 4 indicators per subscale for the analysis. Performing the factor analyses on 19 item-pair scores, rather than 38 individual scores, provided an advantage in performing the factor analysis because this reduced the number of measured variables, providing more reliable scores for analysis considering the limited sample size of the current study.

Table 2

Summary of item pair content and Pearson r correlations between items per item pair

Item Pair	Item Number	Item Content	R
		Physical Ability	
Physical P1	1	My child thinks he/she can run fast.	.25*
	7	My child thinks he/she likes to run and play hard.	
Physical P2	13	My child thinks he/she enjoys sports and games.	.45*
	19	My child thinks he/she can run a long way without stopping.	
Physical P3	25	My child thinks he/she is a good sports person.	.41*
	32	My child thinks he/she likes to play outdoor games.	
		Physical Appearance	
Appearance P1	2	My child thinks he/she is good looking.	.54*
	8	My child thinks he/she likes the way he/she looks.	
Appearance P2	14	My child thinks he/she has a nice looking face.	.00
	20	My child thinks he/she is better looking that most of his friends.	
Appearance P3	26	My child thinks he/she likes the size and shape of his/her	.57*
	33	body.	
		My child thinks he/she is happy with the way he/she looks.	
		Peer Relationships	
Peer P1	3	My child thinks he/she has lots of friends.	.41*
	9	My child thinks that other kids ask him/her to play with them.	
Peer P2	15	My child thinks he/she has more friends than other kids.	.12
	21	My child thinks that most of the kids at preschool like him.	
Peer P3	27	My child thinks that other kids want him/her to be their	.26*
	34	best friend.	
		My child thinks he/she plays with lots of kids at preschool.	
		Parent Relationships	
Parent P1	4	My child thinks he/she likes us (his parents).	.39*
	10	My child thinks we (his parents) like him.	

Parent P2	16	My child thinks he/she has lots of fun with us (his	.40*
	22	parents).	
		My child thinks that we (his parents) play with him a lot.	
Parent P3	28	My child thinks he/she enjoys doing things with us (his	.36*
	31	parents).	
		My child thinks he/she likes to talk to us (his parents).	
Parent P4	35	My child thinks that we (his parents) always listen to	.17
	38	him.	
		My child thinks we (his parents) smile at him a lot.	
		Verbal Abilities	
Verbal P1	5	My child thinks he/she enjoys listening to stories.	.13
	11	My child thinks he/she is good at reading.	
Verbal P2	17	My child thinks he/she enjoys looking at books.	.30*
	23	My child thinks he/she knows lots of letters of the alphabet.	
Verbal P3	29	My child thinks he/she likes it when people read him/her	.27*
	36	stories.	
		My child thinks he/she knows lots of different words.	
		Math Abilities	
Math P1	6	My child thinks he/she is good at telling time.	.35*
	12	My child thinks he/she knows lots of different shapes.	
Math P2	18	My child thinks he/she likes playing number games.	.31*
	24	My child thinks he/she is good at counting.	
Math P3	30	My child thinks he/she likes saying numbers.	.57*
	37	My child thinks he/she knows lot of different numbers.	
		Additional Items	
Fear P1	39	My child thinks he/she is scared of a lot of people.	.63*
	40	My child thinks he/she is scared of a lot of things.	

Note: * Correlation is significant at a 0.05 level (2-tailed). "P" = Pair.

Subsequent to the initial exploratory factor analysis, additional analyses were run because the initial factor analysis did not produce results that were consistent with the hypothesized factor structure. Based on parent feedback in this study that was supported by findings in Langevin, Rinaldi, Beran and Hagler (2009), it became apparent that the telling time (item 6) was a difficult item for preschoolers. Thus, additional analyses were carried out that included an evaluation of correlations among items within item pairs, a content and variance analyses for Math Pair 1 (items 6 and 12), and a subsequent exploratory factor analyses without item 6. In addition, analyses with the Fear items were performed.

Reliability

Internal consistency reliability. Cronbach's Coefficient Alpha was used to determine the reliability coefficient commonly known as internal consistency, which is an index of reliability associated with the variation accounted for by the consistency of the questionnaire. We hypothesized that reliability coefficients found in this study would be consistent with that reported for the parent version of the SDQ for school-aged children. Internal consistency estimates for each subscale for parent-inferred self-concept ranged from .86 to .95 for mothers and .85 to .97 for fathers (Marsh & Craven, 1991).

Test-retest reliability. Test-retest reliability was analyzed using an intra-class correlation based on the subscales that emerged in the exploratory factor analysis. Items were fixed and a subjects random model was used. We hypothesized that scores would be stable over a one-week test-retest interval.

Chapter 4: Results

Initial Exploratory Factor Analysis

The initial exploratory factor analysis of the SDQP-P responses clearly identified a total of six factors that had eigenvalues greater than 1.0, and accounted for 66% of the variance (Table 3). Contrary to our expectations, these six subscales were not the same as the six subscales of the SDQP-P. Three of the factors, Physical Ability, Physical Appearance, and Peer Relationships, were the same as the SDQP; however, in this study the Verbal and Math dimensions were collapsed into one factor defined as general Pre-academic Skills; five of the six Math and Verbal item pairs loaded highest on this factor (.664, .737, .481, .859, and .793). This finding suggests a more holistic concept of Verbal and Math abilities in preschoolers. As well, the Parent Relationship factor split into two factors indicating that parent-inferred parent relations can be represented by two underlying factors that were defined as a child-initiated relationship factor and a parent-initiated relationship factor. This separation of the Parent Relationship subscale into two factors is also supported by the low correlation between those two factors (.280; see Table 2) as further explained in the "Factor correlations" section below.

The first factor labelled as "child-initiated" was defined by affections based on action initiated by the child and reciprocated by the parent (Parent pairs 1 and 3), for example, "My child enjoys doing things with us (his/her parents) and talking to us", and as a summative statement, "My child likes us and we like

him/her". The second factor was defined by affections based on action initiated by the parent and reciprocated by the child (Parent pairs 2 and 4), for example, "We (his/her parents) listen to him/her, smile at him/her, play with him/her", and as a summative statement, "My child thinks he has lots of fun with us". Item pairs loaded strongly onto these factors; .839 and .610 for the child-initiated factor and .678 and .767 for the parent-initiated factor, indicating a clear distinction between these two factors in preschoolers. These findings suggest that parent inferences of their child's relationship with them is based on both affections that are initiated by the child's desire to interact with his/her parents as well as affections that are initiated by the desire of parents to interact with their child, and an element of reciprocity in both parent-child relationships.

Unexpectedly, Math pair 1 loaded most strongly on the Physical Abilities factor (.431), the factor to which it was assigned; however, it had a low negative loading (-.341) on the Parent-initiated Parent Relationship factor. Math pair 1 items focussed on the knowledge of telling time and shapes. It is possible that the loading of these Math items onto the Physical Abilities factor is due to the influence of the "knowing shapes" item (item 12). That is, the "physical" aspect of knowing and manipulating shapes and the incorporation of shapes into childhood games and activities may be perceived as an "ability".

Table 3

Factor structure for parent perceptions of child's self-concept ratings - 1) initial factor analysis (I), 2) without Time item (T), 3) adding Fear (F)

	Self-concept factor loadings																	
Variable	Physical Abilities			Physical Appearance			Peer			Child-initiated Parent			Parent-initiated Parent			Pre-academic Skills		
	I	T	F	I	T	F	I	T	F	I	T	F	I	T	F	I	T	F
Physical P1	.797	.810	.814															
Physical P2	.676	.665	.643															
Physical P3	.668	.661	.682															
Appearance P1				.745	.748	.815				.394	-	-						
Appearance P2				.767	.751	.582	-	-	.334									
Appearance P3				.748	.742	.750												
Peer P1							.815	.826	.766									
Peer P2							.684	.691	.721									
Peer P3							.826	.810	.754									
Parent P1				-	-	.498				.839	.816	.408						
Parent P2													.678	.742	.767	.483	.436	.426
Parent P3										.610	.657	.602	(.342)	-	-			
Parent P4													.767	.792	.781			
Verbal P1																.664	.665	.671
Verbal P2																.737	.762	.759
Verbal P3	.405	.369	-							-	-	.410				.481	.485	.531
Math P1	.431	.473	.509	-	-	.375							-.341	-	-	-	.412	.434
Math P2													-	-	.304	.859	.834	.778
Math P3																.793	.777	.767
Fear P1							-	-	-.309	-	-	-.637						

Note: Factor analyses consisted of a principal-components analysis using a varimax rotation with Kaiser normalization. Items in brackets were interpreted as not belonging to the factor defined by the items in the box. P1 = Pair 1, P2 = Pair 2, etc.

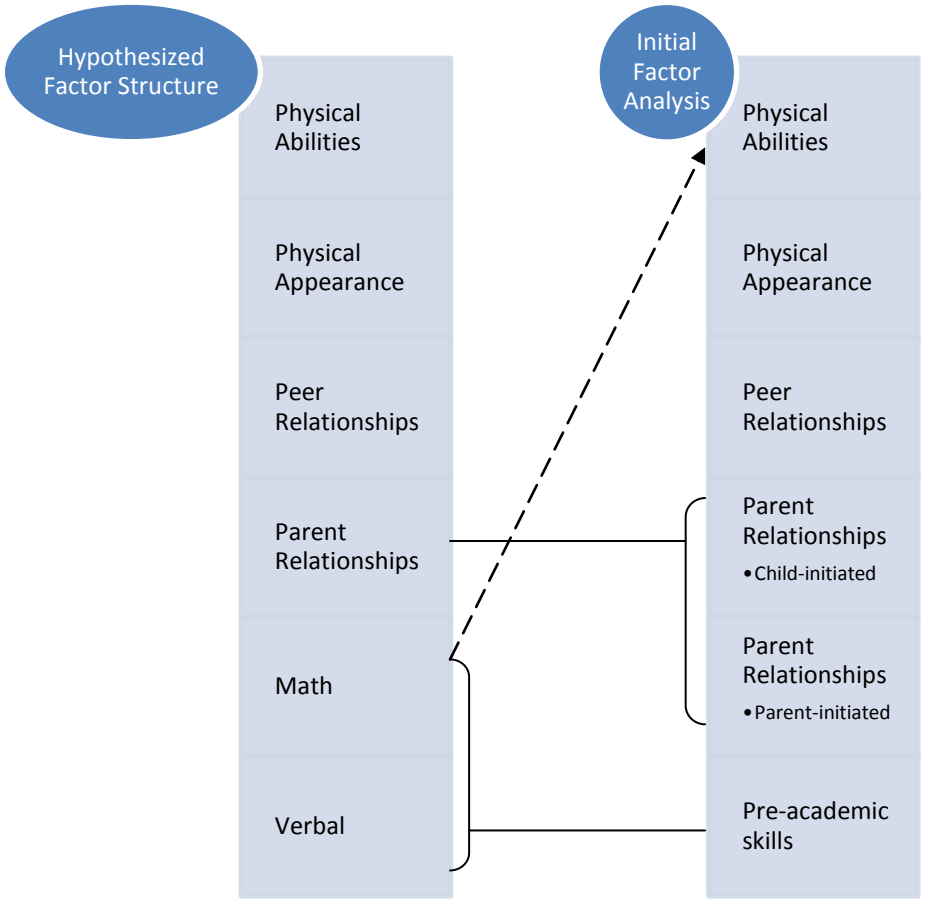
Verbal pair 3 loaded moderately on Pre-academic Skills (.481) as would be expected and was assigned to that factor; however, it also cross-loaded on Physical Abilities (.405). Verbal pair 3 items focus on the child's enjoyment when others read to him/her and the knowledge of different words. Although reading and knowledge of different words are clearly pre-academic skills, it may be that the "abilities" aspect of these skills influenced the less strong loading on the Physical Abilities factor.

Parent pair 2 was assigned to the Parent-initiated Relationship factor based on its loading on that factor (.678); however it also cross-loaded on Pre-academic Skills (.483). The cross-loading may have been influenced by the fact that many pre-academic activities are the foundation upon which many fun play interactions between parents and children are based.

Thus, as shown in Figure 3, the initial exploratory factor analysis revealed a factor structure that was not completely as hypothesized. The collapse of the verbal and math factors into a pre-academic factor and the split of the Parent Relationship factor into two distinct factors seemed to have face validity. However, to gain an understanding of why Math Pair 1 and Verbal Pair 3 did not load on the Pre-academic Skills as would be expected, further analyses were performed to examine the item pair correlations within these factors, the content of item pairs, and the variance of items within the Math subscale.

Figure 3

Comparison of the hypothesized and initial factor structures



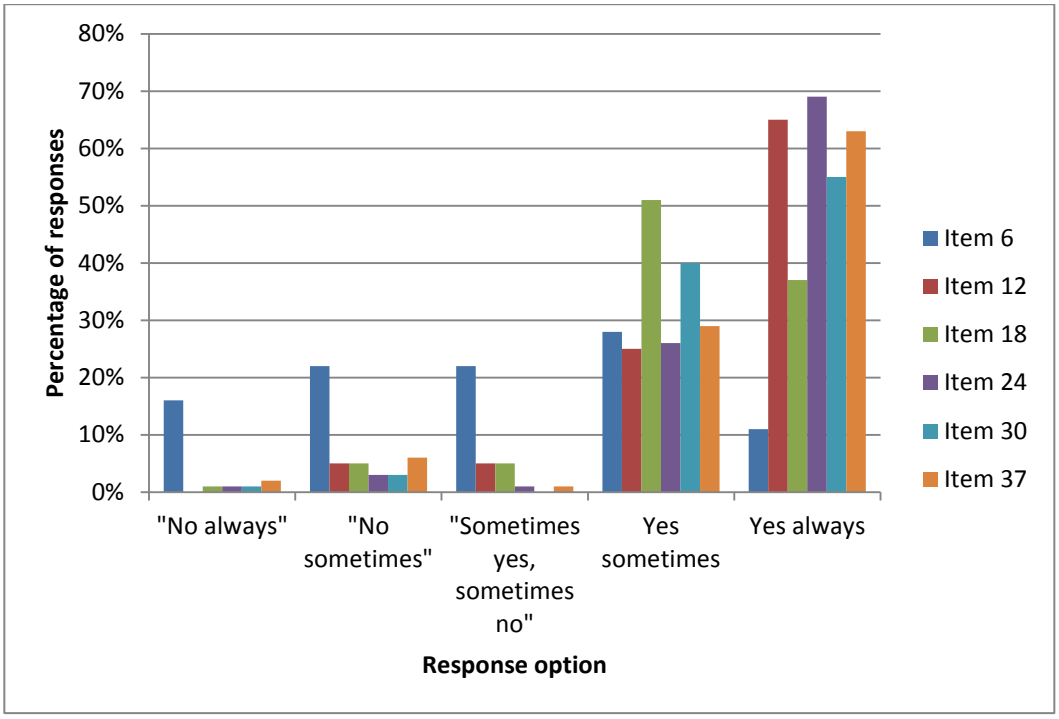
Item pair correlations. Although our primary interest was the correlation of items within the original Math and Verbal subscales, correlations for all item pairs in the scale were conducted to inform the use of item pairs in subsequent research. Interestingly, the statistically significant correlation between items in Math Pair 1 was .35, giving evidence of a reasonable pairing of items. Similarly, the correlation of .27 between items in Verbal Pair 3 was statistically significant. In contrast, three item pairs (Peer Pair 2, r = .12, Parent Pair 4, r = .17, and Verbal Pair 1, r = .13) were only weakly correlated and one item pair (Appearance Pair 2)

had a zero correlation, suggesting that the items in these pairs were weakly or not related. However, the correlations for these four item pairs were not statistically significant at the $p < .05$ level, indicating that these correlations could have occurred by random chance. For the majority of the remaining item pairs, correlations were statistically significant and had weak to moderate correlations ranging from $r = .25$ to .63, supporting the pairing of items for subsequent analysis.

Content and variance analyses for Math pair 1. Despite a high variance (1.59) for item 6 and even spread of scores across response options (Figure 4), content analysis of Math items indicated that item 6 and the pairing of items 6 (My child thinks he/she is good at telling time) and 12 (My child thinks he/she knows lots of different shapes) was problematic. As indicated earlier, parents in this study commented that the concept of telling time in item 6 was a potentially difficult concept for preschoolers. These comments were supported by comments from parents in Langevin, et al.'s (2009) study who also identified telling time as a difficult concept for their preschool-aged children. Based on the content analysis and the parent identified problem with item 6, a second factor analysis was conducted without item 6. Thus, Math Pair 1 was replaced with Math item 12 only in the subsequent analysis to determine if Math item 12 would load on the Pre-academic Skills factor.

Figure 4

Frequencies of responses for items in the Math subscale



Exploratory factor analysis without the time item. As shown in Table 3, with the removal of the time item from the analysis, the Math item 12 loaded even more highly onto Physical Abilities (from .431 in the initial factor analysis to .473) and the low negative loading of the original Math pair 1 on Parent-initiated Parent Relationship (-.341) disappeared. However, Math item 12 also now cross-loaded on Pre-academic Skills factor (.412) but remained assigned to the Physical Abilities factor. This suggests that knowledge of shapes reflects both physical abilities and pre-academic skills. In contrast, the factor loadings for the other item pairs remained fairly similar to the initial exploratory factor analysis and the factor structure of the SDQP-P without the time item did not explain any more of the total variance than did the initial factor structure (66%).

Exploratory factor analysis with the Fear items. A third factor analysis was conducted to determine the fit of the fear items with the SDQP-P and their contribution to the factor structure. Fear items, 39 ("My child thinks he/she is scared of a lot of people") and 40 ("My child thinks he/she is scared of a lot of things") were thought to measure similar content and were paired as "Fear pair 1" for the data analyses. As shown in Table 3, the Fear items loaded most strongly on the Child-initiated Parent Relationship factor but in a negative direction (-.637). They also negatively cross-loaded on the Peer Relationship factor but less strongly so (-.309); therefore the Fear pair was assigned to the Child-initiated Parent Relationship factor. These results indicate that the Fear items did not represent a unique dimension distinct from the other dimensions already in the SDQP-P but instead measured the same underlying construct as measured by the items in the Child-initiated Parent Relationship factor.

Addition of the fear items also resulted in some notable changes in item loadings that either strengthened or diminished the assignment of items to factors. Addition of the fear items strengthened the loading of Math item 12 on the Physical Abilities factor (from .431 and .473 in previous analyses to .509), suggesting that "knowledge of shapes" even more strongly reflects physical abilities. However, the cross-loading of Math item 12 on Pre-academic Skills remained substantial. The loading of Verbal pair 3 on Pre-academic Skills also was strengthened and its cross-loading changed from Physical Abilities to the Child-initiated Parent Relationship factor which has more face validity than the cross- loading on Physical Abilities. That is, being read to and knowing lots of

different words is more likely reflective of the child's relationship with his/her parents than the child's physical abilities. In contrast, addition of the Fear items caused a change in item assignment of Parent pair 1 (…he likes us….we...like him) from Child-initiated Parent Relationship to Physical Appearance due to a drop in the loading on the Child-initiated Parent Relationship factor to .408 from .839 and .816 in the earlier analyses and the new loading of .498 on Physical Appearance. This change in factor assignment has face validity in that physical appearance contributes to the act of liking, which in this case is liking between parents and children. Similarly, the addition of the fear items caused the loading of Appearance pair 2 to drop to .582 from .767 and .752 in the previous analyses and caused a cross loading on to the Peer factor (.334); however, there was no change in the assignment of this pair of items.

Despite the changes to item loadings and the change in the assignment of Parent pair 1, the addition of the Fear items did not account for any more of the variance in the responses than already accounted for by items in the original questionnaire. The exploratory factor analysis including the Fear items accounted for 65% of the total variance, explaining marginally less of the variance in the responses than explained when the Fear items were excluded (66%).

Factor correlations among the six self-concept factors. Factor correlations were conducted with and without the Fear items in the Child-initiated Parent factor and without item 6 in the Pre-academic Skills factor. As shown in Table 4, correlations without the fear items ranged from -.005 to .413. Two of the highest three correlations were between Pre-academic Skills and Physical

Abilities (.413), and Pre-academic Skills and Parent-initiated Parent Relationship (.396). The third highest correlation was between Physical Abilities and Peer Relationships (.390). As would be expected, the correlation between Child-initiated Parent Relationship and Parent-initiated Parent Relationship factors was positive, however it was small (.280), suggesting that these factors are indeed distinct.

When the Fear items were included in the Child-initiated Parent factor, correlations ranged from -.050 to .413 and there were only four substantial changes that were notable: (a) the correlation between the Child-initiated Parent Relationship and Parent-initiated Parent Relationship factors decreased from .280 to .107 and became non-significant, (b) the correlation between the Physical Appearance and Child-initiated Parent Relationship factors decreased from .330 to -.050 and became non-significant, and (c) the non-significant correlation between the Physical Abilities and Child-initiated Parent Relationship factors decreased from .149 to .001 and remained non-significant. The only change that increased the distinctiveness of the factors was the correlation between the Child-initiated Parent Relationship and Pre-academic Skills factors.

Table 4

Factor correlations among the six new self-concept factors without and (with) the Fear items in the Child-initiated Parent factor

Self-concept factor	1	2	3	4	5	6
1. Physical Ability	-					
2. Physical Appearance	.276* (.276*)	-				
3. Peer Relationships	.390* (.390*)	.314* (.314*)	-			
4. Child-initiated Parent Relationship	.149 (.001)	.330* (-.050)	-.005 (-.176)	-		
5. Parent-initiated Parent Relationship	.258* (.258*)	.124 (.124)	.217* (.217*)	.280* (.107)	-	
6. Pre-academic Skills	.413* (.413*)	.136 (.136)	.279* (.279*)	.228* (.206*)	.396* (.396*)	-

Note: Correlations indicated with a * are significant at the $p<.05$ level.

Correlations among factors in this study with and without the Fear items were low further suggesting that the factors that emerged in this preliminary study are distinctive. Indeed, the range of correlations among the Physical Ability, Physical Appearance and Peer Relationships factors found in this study is lower than those found in Marsh and Craven (1991). That is, correlations among these factors ranged from .276 to .390 in this study compared to a range of .366 to .629 in Marsh and Craven; however, the correlations among factors in Marsh and Craven included self-concept responses of school-age children and inferred self-concept responses from parents and teachers.

Reliability

Internal consistency estimates and test-retest reliability analyses were conducted without item six in the Pre-academic Skills factor and with and without the fear items.

Internal consistency. Cronbach's coefficient alpha without the fear items for the six factor subscales were moderate to strong (see Table 5), ranging from .591 to .803. Reliability estimates for Child-initiated Parent Relationship and Parent-initiated Parent Relationship fell below the suggested criterion of greater than .70 for group comparisons; the remaining subscales met this criterion. However, all reliability estimates fell below the suggested criterion of being greater than .90 for use with individuals (Nunnally & Bernstein, 1994).

Table 5

Reliability coefficient estimates for each subscale in the SDQP-P without and (with) fear in the Child-initiated Parent Relationship factor

Subscale	Reliability coefficient estimate
Physical Ability	.741
Physical Appearance	.745
Peer	.722
Child-initiated Parent	.614 (.399)
Parent-initiated Parent	.591
Pre-academic Skills	.803
Total scale	.857 (.836)

When the Fear items were included in the Child-initiated Parent Relationship factor, coefficient alpha dropped significantly from .614 to .399. This indicates that the addition of the Fear items reduced the internal consistency of the factor.

Test-retest reliability. The one-week test-retest reliabilities, Pearson's r, for the SDQP-P subscales are reported in Table 6. Test-retest reliabilities for each subscale for the original items were moderate to strong, ranging from .427 to .833 (mean r = .725). All reliability coefficients were significant at the 0.01 level. Reliabilities for most subscales, except Physical Ability and Child-initiated Parent Relationship, exceeded Streiner and Norman's (1991) 0.75 criterion for test-retest correlations for subscales.

Table 6

Test-retest reliability coefficients for each subscale on the SDQP-P without and (with) fear items in Child-initiated Parent Relationship factor

Subscale	*r*
Physical Ability	.717
Physical Appearance	.833
Peer	.779
Child-initiated parent	.427 (.598)
Parent-initiated parent	.761
Pre-academic skills	.831
Mean	.725 (.753)

When the fear items were included in the Child-initiated Parent Relationship factor, test-retest reliability of the Child-initiated Parent factor improved (from .427 to .598), although it was relatively weak when compared to other subscales (range = .717 to .833).

Parent Feedback on Difficulty of Items

In addition to the parent feedback on the difficulty of the time item, four parents commented on item 20 on the Physical Appearance subscale ("My child thinks he/she is better looking than most of his [/her] friends"). These parents did not think that their children (ages 3;3 to 5;7) had any self-concept about the way he or she looks. One family indicated that the child's lack of self-concept about the way the child looks may have been due to the fact that their children do not watch television. Similar findings were reported by parents in Langevin et al. (2009). When Langevin and colleagues asked if their children would have understood the SDQP items, some parents indicated that their children would not have understood the words "Are you better looking than most of your friends?" or the content of this item, "better looking than most". This difficulty may account

for the lack of a correlation between item 20 and its paired item 14 in Appearance pair 2 (see Table 2). Despite this parent feedback, Appearance pair 2 loaded strongly on the Physical Appearance factor.

Chapter 5: Discussion

This pilot study sought to evaluate the factor structure, internal consistency, and test-retest reliability of the newly developed SDQP-P. Findings suggest that (1) the factor structure for the parent-inferred self-concept scale may differ from the factor structure of the preschoolers' self-concept scale; (2) the addition of Fear items did not change the overall factor structure; however, they had influence on item loadings and correlations among factors; (3) generally satisfactory measures of internal consistency and test-retest reliability were obtained for factor subscales, and (4) findings support the multidimensional view of self-concept in children.

Factor Structure, Internal Consistency, and Test-Retest Reliability of the SDQP-P without the Fear Items

Consistent with the SDQ for preschoolers, findings revealed that parent responses to the SDQP-P could be explained by underlying constructs that represent Physical Abilities, Appearance, and Peer Relationships. However, three new factors were revealed: Pre-academic Skills, Child-initiated Parent Relationship and Parent-initiated Parent Relationship. Findings also revealed problems with one Math item pair and one Verbal item in terms of item loadings and assignments within the Pre-academic Skills factor.

Pre-academic Skills. This study provided preliminary evidence for the collapse of the math and verbal factors into a Pre-academic Skills factor for preschoolers. Five of the six Math and Verbal item pairs loaded highly onto the factor defined as Pre-academic Skills, indicating that parent's perceptions of

preschoolers' math and verbal self-concepts may not be as distinct as the math and verbal self-concepts of preschoolers themselves. These findings are inconsistent with that of Marsh et al. (2002) who found distinct Math and Verbal factors in their research with preschoolers and Marsh and Craven (1991) who found distinct Math and Verbal factors for parent-inferred and self-reported self-concept of children in grades 3 to 6. Interestingly, in their research with preschoolers, Marsh et al. (2002) also found a high correlation ($r = .73$) between the Math and Verbal factors, suggesting that math and verbal self-concepts may be less distinctive in preschoolers than originally thought. However, despite this high correlation, Marsh and Craven (1991) recommended retaining distinct Math and Verbal factors due to the theoretical basis for this distinction, the better fit in a confirmatory factor analysis of a model that distinguished Math and Verbal factors as separate factors, and the trend of increasing differentiation between Math and Verbal self-concepts as found in Marsh, Relich, and Smith's (1983) research with children aged 9 to 13.

Unclear factor loadings for Math pair 1 and Verbal pair 3. Math pair 1 and Verbal pair 3 item pairs showed unclear factor loadings in our initial and subsequent analyses. The Math item pair defined by the time item and shapes item loaded more highly on Physical Abilities in the initial factor analysis, with a moderate negative loading on Parent-initiated Parent Relationship, suggesting that time and shapes involve more of a physical or abilities aspect, rather than an academic aspect for 3 to 5 year old children. However, when the time item was removed based on parent report of difficulty with the item, the remaining shapes

item had an even higher loading on Physical Abilities, the negative loading on Parent-initiated Parent factor disappeared, and the item then cross-loaded on Pre-academic Skills.

Although Verbal pair 3 consistently loaded most highly on Pre-academic Skills, it also cross-loaded on Physical Abilities with and without the time item. With the addition of the Fear items, the cross-loading then changed from Physical Abilities to the Child-initiated Parent factor. Verbal pair 3 items involved questions about enjoying being read stories, which has a strong interpersonal aspect as well as a weaker link to literacy skills considering the child's young age and lack of reading skills. The cross-loadings of these Math and Verbal item pairs indicate that the assignment of these item pairs to factors needs to be re-examined as they are not clearly defined as a Pre-academic concept in parent-inferred self-concept for preschoolers.

Child-initiated and parent-initiated relationship factors. This pilot study makes a unique contribution to the discussion of parent-inferred self-concept of parent-child relationships in young children, distinguishing between the influence of child-initiated and parent-initiated affections. This distinction was not reported in parent-inferred responses for older children, 5 to 8 years old (Marsh et al., 1991), nor was it observed when researchers obtained self-concept responses from preschoolers (Marsh et al., 2002) and school-age children themselves (Marsh et al., 1991, Marsh et al. 1983). However, there is some evidence in the research with school-age children that the parent-inferred construct of Parent Relationship is not as strongly supported as it is for the school-

age children themselves. In contrast to the strong factor loadings of items on the Parent Relationship factor for the school age children (means ranged from .624 to .771), mean factor loadings for this factor in responses from mothers (.390) and fathers (.355) were weak. Findings in this study and the weak parent-inferred item loadings described above suggest that parents and children may have differing views on their relationships with each other; however, whether the distinctiveness of the parent relationship factors found in this study will bear out in further studies remains to be seen.

Internal consistency. With the exception of the two new parent factors, estimates of internal consistency exceeded the required .70 criterion for group comparisons. When comparing internal consistencies in this study with those found in parent-inferred research with school-aged children, reliability estimates in this study were considerably lower than those obtained for parent-inferred ratings for school-aged children (.86 to .95 for mothers, and .85 to .97 for fathers). Estimates of internal consistency in this study were also lower than those for self-ratings of school-aged children (.77 to .90) and self-ratings of preschoolers (.75 to .89) (Marsh, et al., 2002; Marsh and Craven, 1991). However, when compared to the other self-concept measures for preschoolers reviewed in Chapter 1 (the TSCVT, the Brown-IDS, and the PSPCSA), the psychometric properties of the SDQP-P were relatively strong.

Test-retest reliability. In the absence of existing test-retest reliability for parent-inferred self-concept scales for preschool and older children, comparisons of test-retest reliabilities can only be made to existing test-retest findings for self-

reported self-concept in children. Test-retest subscale correlations found in this study ranged from moderate to strong and were well within the range of test-retest reliability coefficients reported in a meta-analysis of self-concept measures for young children (r = .46 - .87) (Davis-Kean and Sandler, 2001). They were also slightly higher than those obtained with school-aged children in previous SDQ research (range = .48 to .77, mean r = .64; Marsh and Craven, 1991).

Factor Structure, Internal Consistency, and Test-Retest Reliability of the SDQP-P with the Fear Items

This study was also unique in its exploration of the addition of fear items to the SDQP-P. Fear items were deemed to be a good fit with the Shavelson et al.'s (1976) model of self-concept in that they represent a particular emotional state. The most notable results with the addition of the Fear items were the assignment to the Child-initiated Parent Relationship factor, some changes in item pair loadings that rendered previously statistically significant correlations non-significant, and decreased internal consistency but improved test-retest reliability in the Child-initiated Fear factor.

The exploratory factor analysis revealed that the two Fear items loaded strongly, but in a negative direction, on the Child-initiated Parent Relationship factor. This suggests that there is an inverse relationship between fear and the child's comfort in initiating affection and desire to do things with and talk to his/her parents. Also, adding the Fear items caused cross loadings of Parent pair 1 ("My child thinks he/she likes us [his parents]", "My child thinks we [his parents]

like him") on the Child-initiated Parent factor, to which it had been assigned in the prior factor analysis, and the Physical Appearance factor. However, the higher loading on Physical Appearance suggested that it should be assigned to that factor instead of the Child-initiated Parent factor. This suggests that, with the addition of the Fear construct, items in Parent pair 1 seem to be interpreted by parents as being based on appearance, for example, "likes how we look", rather than being based on the more gestalt feeling of "liking" someone.

Although the addition of the fear items did not improve the internal consistency or explain any more of the variance than when they were excluded, the inclusion of the fear items to the SDQP-P added new information about the potential fit of the fear items to the factor structure of the SDQP-P and their relationship with the existing factors. The fear items were added because they fit with the model underlying development of the SDQP items for preschoolers, and hence the SDQP-P, and they added to the comprehensiveness of the content of the scale. However, further research is needed to more definitively determine whether or not their addition is psychometrically warranted.

A Multidimensional View of Self-Concept

Central to the theoretical basis of self-concept is the debate of whether self-concept is a unidimensional or a multidimensional construct. The SDQP-P was designed to measure the six dimensions of self-concept as defined in the child version of the SDQP (Marsh et al., 2002), based on Shavelson et al.'s (1976) model of multidimensional self-concept. Previous self- and other-inferred

research with preschoolers by Marsh and colleagues (2002) study found a six-factor structure of self-concept (Physical Abilities, Physical Appearance, Peer Relationships, Parent Relationships, Math, and Verbal). As well, research with school-aged children supported a clear eight-factor structure (the same six factors as above, plus General School Subjects and General Self Concept factors) in both self- and other-inferred self-concept (Marsh and Craven, 1991; Marsh et al., 1991). Factor loadings in this study revealed six distinct clusters of items, specifying six factors of parent-inferred self-concept. Also, correlations among factors supported the distinctiveness of the factors. Although the factor analysis in this study did not extract the same six-factor structure as the child version of the SDQP as hypothesized, this pilot study provides further support for the multidimensional structure of self-concept.

Limitations

A limitation of this present study was the small sample size and the pairing of items. Analyses were conducted using item pairings as was done in earlier research in order to deal with the small sample size and in order to make comparisons to the earlier research findings. However, given the problem with Math pair 1 and the low or non-existent correlations among items in some of the item pairs, it is apparent that a more stringent item by item analysis is required to determine the contribution of each item to the scale.

Future Research

Factor structure and psychometrics for the SDQP-P. As mentioned above, further research with an adequate sample of at least 200 parents exploring

the factor structure of parent-inferred self-concept in preschoolers is needed to determine if the findings of this pilot study can be replicated with a sample that is of an adequate size, in particular with regard to the collapse of the math and verbal factors, the split of the parent dimension into the parent and child-initiated factors, and the changes caused by the inclusion of the Fear items. Findings also suggest that further research using exploratory factor analyses with single items would be beneficial. Item analysis to determine the contribution of each item to the scale, and choosing items with the highest correlations of item scores to total scores would also be beneficial. Item-total correlation scores indicate the extent to which items discriminate among respondents in the same manner as the total score (Mueller, 1986); higher correlations have more variance relating to a common factor and thus enhance scale reliability (Nunnally, 1970).

Further research investigating convergent validity with scores from the child himself/herself and from parents and teachers, and concurrent validity with other self-concept measures for both the child version and the SDQP-P is also needed. It will be important to determine if the scores that parents report are accurate in describing their child's self-concept.

Development of a norms archive for child and parent versions of the SDQP would be the next step after complete psychometric testing of the SDQP-P. Normative data would support the clinical use of the SDQP in speech-language therapy, psychological, and educational settings.

Longitudinal studies. After the SDQP-P has been fully developed, a future project would be a longitudinal study to compare child- versus parent-inferred development in self-concept, spanning from the preschool to adolescent years. A study of that magnitude would determine whether math and verbal self-concepts emerge as an undifferentiated general pre-academic self-concept in preschoolers developing into two fully distinct self-concepts as the child progresses through the school years.

Effect of parent education level and parenting style. Data on the educational level and parenting style of the parents were not collected for this present study, but would be useful demographic information to collect in the future to examine how educational level, and the resulting parenting style, influences the factor structure of parent-inferred self-concept in preschoolers.

Extension to different populations. Research on the use of the child and the parent versions of the SDQP can also be extended to different populations, including children with speech and language delays and stuttering. Parents of preschoolers often report that stuttering has affected their child's self-confidence, thus differences in SDQP-P scores given by parents of children who stutter and parents of typically fluent children should be investigated. The stability of the SDQP-P factor structure among these groups of parents should also be explored, although it is not expected that the factor structure of SDQP-P will differ among different groups of parents. Research can also be extended for use across different cultures to determine whether self-concept is stable, and which dimensions remain stable, across cultures.

Chapter 6: Conclusion

This study adds to the extensive research that supports the use of the SDQ instruments to measure distinct dimensions of self-concept. It also contributes to the discussion on the development of self-concept, suggesting that parent-inferred self-concept in children as young as 3 to 5 years old is differentiated in all areas except math and verbal abilities. Future research developing the parent version of the SDQP as a reliable and valid tool is needed. As well, further research is needed to explore the parent and child-inferred factor structure of self-concept, in particular the collapse of math and verbal abilities, the distinction between "child-initiated" and "parent-initiated" affections in a parent-child relationship, and the changes to the factor structure of self-concept when the Fear items are included. The development of the parent version of a preschool self-concept measure has important clinical implications, potentially leading to the early identification of self-concept issues in young children and the use of self-concept scales as diagnostic and outcomes measures in preschoolers who stutter or who have other speech and language delays.

References

Andrews, G. & Harris, M. (1964). *The syndrome of stuttering.* London, England: Heinemann.

Arndt, J. & Healey, E. C. (2001). Concomitant disorders in school-age children who stutter. *Language, Speech, and Hearing Services in Schools, 32*, 68-78.

Bernstein Ratner, N., & Silverman, S. (2000). Parental perceptions of children's communicative development at stuttering onset. *Journal of Speech, Language, and Hearing Research, 43*(5), 1252-1263.

Blood, G. W., Blood, I. M., Maloney, K., Meyer, C., & Qualls, C. D. (2007). Anxiety levels in adolescents who stutter. *Journal of Communication Disorders, 40*, 452-469.

Blood, G. W., Blood, I. M., 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*, 143-159.

Blood, G. W., Blood, I. M., Tramontana, M., Sylvia, A. J., Boyle, M. P., & Motzko, G. R. (2011). Self-reported experience of bullying of students who stutter: Relations with life satisfaction, life orientation, and self-esteem. *Perceptual and Motor Skills, 113*(2), 353-364.

Bloodstein, O. (1995). *A handbook on stuttering* (5th ed.). San Diego, CA: Delmar Learning.

Bloodstein, O., & Bernstein Ratner, N. (2008). *A Handbook on Stuttering* (6th ed). Clifton Park, NY: Delmar Learning.

Boey, R. A., Van de Heyning, P. H., Wuyts, F. L., Helyen, L., Stoop, R., & De Bodt, M. S. (2009). Awareness and reactions of young stuttering children aged 2-7 years old towards their speech disfluency. *Journal of Communication Disorders, 42*, 334-346.

Branden, N. (1969). *The Psychology of Self-Esteem*. Los Angeles, CA: Nash Publishing Corporation.

Brown, B. R. (1966). The assessment of self-concept among four-year-old negro and white children: A comparative study using the Brown-IDS Self Concept Referents Test. New York Institute for Developmental Studies.

Buss, A. (2001). *Psychological Dimensions of the Self.* Thousand Oaks, CA: Sage Publications, Inc.

Davis-Kean, P. E. & Sandler, H. M. (2001). A meta-analysis of measures of self-esteem for young children: A framework for future measures. *Child Development, 72*(3), 887-906.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method (3rd Ed.)*. Hoboken, NJ: John Wiley & Sons, Inc.

Eder, R. A. (1990). Uncovering young children's psychological selves: Individual and developmental differences. *Child Development, 61*, 849-863.

Ezrati-Vinacour, R., Platzky, R., & Yairi, E. (2001). The young child's awareness of stuttering-like fluency. *Journal of Speech, Language, and Hearing Research, 44*(2), 368-380.

Gorsuch, R. L. (1983). *Factor Analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.

Granleese, J. & Joseph, S. (1994). Reliability of the Harter self-perception profile for children and predictors of global self-worth. *The Journal of Genetic Psychology, 155*(4), 487-492.

Guitar, B. & McCauley, R. (2010*). Treatment of stuttering: established and emerging interventions*. Baltimore, MD: Lippincott Williams & Wilkins.

Harter, S. (1982). The Perceived Competence Scale for Children. *Child Development, 53*, 87-97.

Harter, S. & Pike, R. (1984). The Pictorial Scale of Perceived Competence and Social Acceptance for young children. *Child Development, 55,* 1969-1982.

Hughes, H. M. (1984). Measures of self-concept and self-esteem for children ages 3-12 years: A review and recommendations. *Clinical Psychology Review, 4*, 657-692.

IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0 Armonk, NY: IBM Corp.

Jensen, M. A. (1985). Development of a preschool self-concept scale. *Early Child Development and Care, 22*(2), 89-107.

Keller, A., Ford, L. H., Jr., & Meacham, J. A. (1978). Dimensions of self-concept in preschool children. *Developmental Psychology, 14*(5), 483-489.

Kline, P. (2000). Handbook of psychological testing. London: Routledge.

Kloth, S. A. M., Kraaimaat, F. W., Janssen, P., & Brutten, G. J. (1999). Persistence and remission of incipient stuttering among high-risk children. *Journal of Fluency Disorders, 24,* 253-265.

Landry, R. G., Schilson, E., & Pardew, E. M. (1974). Self concept enhancement in a preschool program. *The Journal of Experimental Education, 42*(4), 39-43.

Langevin, M. (2009). The Peer Attitudes Toward Children who Stutter scale: Reliability, known groups validity, and negativity of elementary school-age children's attitudes. *Journal of Fluency Disorders, 34*(2), 72-86.

Langevin, M., Bortnick, K., Hammer, T., & Wiebe, E. (1998). Teasing/bullying experienced by children who stutter: Toward development of a questionnaire. *Contemporary Issues in Communication Science and Disorders*, 25, 12-24.

Langevin, M., & Hagler, P. (2004). Development of a scale to measure peer attitude toward children who stutter. In A. K. Bothe (Ed.), *Evidence-based treatment of stuttering: Empirical bases and clinical implications* (pp. 139-171). Mahwah, NJ: Lawrence Erlbaum Associates.

Langevin, M., Kleitman, S., Packman, A., & Onslow, M. (2009). The Peer Attitudes Toward Children who Stutter (PATCS) scale: An evaluation of validity, reliability and the negativity of attitudes. *International Journal of Language and Communication Disorders, 44*(3), 352-368.

Langevin, M., Packman, A., & Onslow, M. (2009). Peer responses to stuttering in the preschool setting. *American Journal of Speech-Language Pathology, 18*(3), 264-276.

Langevin, M., Packman, A., & Onslow, M. (2010). Parent perceptions of the impact of stuttering on their preschoolers and themselves. *Journal of Communication Disorders, 43*, 407-423.

Langevin, M., Rinaldi, C., Beran, T., & Hagler, P. (2009, November*). Measuring the psycho-social impact of stuttering in preschoolers.* Poster presented at the Annual Conference of the American Speech-Language-Hearing Association, New Orleans, LA

Long, B. H., Ziller, R. C., & Henderson, E. H. (1969). *The Self-social Constructs Test.* Towson, MD: Goucher College.

MacEachern, M. J. (1991). *Development of a scale to measure peer attitudes toward stuttering children* (Unpublished master's thesis). Retrieved from Proquest Dissertations and Theses Database. (Publication No. MM69967).

Mansson, H. (2000). Childhood stuttering: Incidence and development. *Journal of Fluency Disorders, 25*, 45-57.

Marsh, H. W. (1989). Age and sex effects in multiple dimensions of self-concept: preadolescence to early adulthood. *Journal of Educational Psychology, 81*(3), 417-430.

Marsh, H. W. (1990). *Self-Description Questionnaire – I Manual*. Self-concept Enhancement and Learning Facilitation (SELF) Research Centre. Campbelltown, Australia.

Marsh, H. W. (2008). A multidimensional, hierarchical model of self-concept: an important facet of personality. In G. J. Boyle, G. Matthews, & D. H. Saklofske (Eds.), *The SAGE Handbook of Personality Theory and Assessment, Vol. 1* (pp. 447-469). Thousand Oaks, CA: Sage Publications, Inc., US.

Marsh, H. W., & Craven, R. G. (1991). Self-other agreement on multiple dimensions of preadolescent self-concept: Inferences by teachers, mothers, and fathers. *Journal of Educational Psychology, 83*(3), 393-404.

Marsh, H. W., Craven, R. G., & Debus, R. (1991). Self-concepts of young children 5 to 8 years of age: Measurement and multidimensional structure. *Journal of Educational Psychology, 83*(3), 377-392.

Marsh, H. W., Craven, R., & Debus, R. (1998). Structure, stability, and development of young children's self-concepts: a multicohort-multioccasion study. *Child Development, 69* (4), 1030-1053.

Marsh, H. W., Ellis, L. A., & Craven, R. G. (2002). How do preschool children feel about themselves? Unraveling measurement and multidimensional self-concept structure. *Developmental Psychology, 38*(3), 376-393.

Marsh, H. W., & Hattie, J. (1996). Theoretical perspectives on the structure of self-concept. In B. A. Bracken (Ed.), *Handbook of self-concept* (pp. 38-90). New York, NY: Wiley.

Marsh, H. W., & O'Mara, A. (2008). Self-concept is as multidisciplinary as it is multidimensional: A review of theory, measurement, and practice in self-concept research. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *Self-processes, learning, and enabling human potential: Dynamic new approaches* (pp. 87-115). Charlotte, NC: Information Age Publishing, Inc.

Marsh, H. W., Relich, J. D., & Smith, I. D. (1983). Self-concept: the construct validity of interpretations based upon the SDQ. *Journal of Personality and Social Psychology, 45*(1), 173-187.

Mruk, C. J. (2006). *Self-esteem research, theory, and practice: Toward a positive psychology of self-esteem* (3rd ed.). New York, NY: Springer Publishing Company.

Mueller, D. J. (1986). *Measuring social attitudes.* New York, NY: Teachers College Press, Columbia University.

Nunnally, J. C. (1970). *Introduction to psychological measurement.* New York, NY: McGraw-Hill.

Nunnally, J. C. & Bernstein, I. H. (1994). *Psychometric Theory*. New York, NY: McGraw-Hill, Inc.

Onslow, M., Packman, A., & Harrison, E. (Eds.) (2003). *The Lidcombe Program of early stuttering intervention: A clinician's guide*. Austin, TX: Pro-Ed.

Piers, E. V., & Herzberg, D. S. (2005). *Piers-Harris Children's Self-Concept Scale (2nd ed.) manual*. Los Angeles, CA: Western Psychological Services.

Reilly, S., Onslow, M., Packman, A., Wake, M., Bavin, E. L., Prior, M., et al. (2009). Predicting stuttering onset by the age of 3 years: A prospective, community cohort study. *Pediatrics, 123*, 270-277.

Riley, G., & Riley, J. (1999). Commentary on the Lidcombe Program and natural recovery. *Advances in Speech-Language Pathology, 1*(2), 123-125.

Rosenberg, M., & Kaplan, H. B. (Eds.) (1982). Introduction. *Social Psychology of the Self-Concept* (pp. 2-12). Arlington Heights, IL: Harlan Davidson, Inc.

Schaffer, D. R., & Kipp, K. (2007). Development of the self and social cognition. In D. R. Schaffer & K. Kipp (Eds.), *Developmental psychology: Childhood & adolescence* (7th ed.). (pp. 467-507). Belmont, CA: Thomson Wadsworth.

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: validation of construct interpretations. *Review of Educational Research, 46*(3), 407-441.

Smith, M. D. (1978). The development and validation of the Maryland Preschool Self-Concept Scale. (Doctoral dissertation, University of Maryland, 1977). *Dissertation Abstracts International, 38,* 416.

Stager, S., & Young, R. D. (1982). A self-concept measure for preschool and early primary grade children. *Journal of Personality Assessment, 46,* 563-543.

Streiner, D. L. & Norman, G. R. (1991). Health measurement scales: a practical guide to their development and use, 2nd ed. New York: Oxford University Press, 1991: 90.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics (3rd ed.).* New York, NY: HarperCollins.

Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma & J. D. Maser (Eds.), *Anxiety and the anxiety disorders* (pp. 681-706). Hillsdale, NJ: Erlbaum.

Thomas, W. (1969). The assessment of self-concept values among 4- to 9-year old children. *The Thomas Self-Concept Values Test*. Detroit, MI: Educational Services Company.

Vanryckeghem, M., Brutten, G. J., & Hernandez, L. M. (2005). A comparative investigation of the speech-associated attitude of preschool and kindergarten children who do and do not stutter. *Journal of Fluency Disorders, 30*(4), 308-318.

Wevrick, P., & Mervyn, J. (1999). Natural histories in preschool children who stutter. *Journal of Speech-Language Pathology and Audiology, 23,* 173-83.

White, W. F., & Human, S. (1976). Relationship of self-concepts of three-, four-, and five-year-old children with mother, father, and teacher perceptions. *The Journal of Psychology, 92,* 191-194.

Wylie, R. C. (1969). *Measures of Self-Concept*. Lincoln, NB: University of Nebraska Press.

Yairi, E., & Ambrose, N. G. (1992). Onset of stuttering in preschool children: Selected factors. *Journal of Speech and Hearing Research, 35*(4), 782-788.

Yairi, E., & Ambrose, N. G. (1999). Early childhood stuttering I: Persistency and recovery rates. *Journal of Speech, Language, and Hearing Research, 42*, 1097-1112.

Yairi, E., & Ambrose, N. (2005). *Early Childhood Stuttering: For Clinicians by Clinicians*. Austin, TX: Pro-ed.

Yovetich, W. S., Leschied, A. W., & Flicht, J. (2000). Self-esteem of school-age children who stutter. *Journal of Fluency Disorders, 25,* 143-153.

Appendix A: Recruitment Advertisement

Institute for Stuttering Treatment and Research (ISTAR)
Communication Improvement Program (CIP)
An Institute of the Faculty of Rehabilitation Medicine, University of Alberta

Development of a scale to measure parent's perceptions of their children's self-concept

Interested in participating in a research study?

Eligible if…

Your child is

- 3 to 5 years old
- typically fluent or stutters
- has no history of hearing, physical, cognitive, behavioural problems, or other speech and language problems (other than stuttering, mild articulation or phonological problems)

Study requirements

- Completion of a 5-10 min online questionnaire
- Computer access

In appreciation for the time spent in completing the questionnaire, you will be invited to enter a draw for an **ipad** or an **ipad mini**!

If you are interested, please contact:

Joyce Fok
jjfok@ualberta.ca

OR

Dr. Marilyn Langevin
marilyn.langevin@ualberta.ca
(780) 492-0975

Appendix B: Letter of Invitation

Institute for Stuttering Treatment and Research (ISTAR)
Communication Improvement Program (CIP)
An Institute of the Faculty of Rehabilitation Medicine, University of Alberta

Title of Research Study: **Development of a Scale to Measure Parents' Perceptions of their Children's Self-Concept**

Principal Investigator: **Joyce Fok, M.Sc.-SLP student,** Graduate Student, Department of Speech Pathology and Audiology, University of Alberta

Co-Investigator: **Dr. Marilyn Langevin,** Assistant Professor, Institute for Stuttering Treatment and Research, Faculty of Rehabilitation Medicine, University of Alberta

Dear Sir/Madame:

We invite you to participate in a study. This study measures parents' perceptions of their child's self-concept. Self-concept includes self-esteem and self-confidence. The results of this study will help speech-language pathologists and other professionals who work with children to measure preschoolers' self-concept. Many problems that affect children, including stuttering and other communication problems, can affect a child's self-esteem and self-confidence.

We invite you to complete an online questionnaire at (link to be added). 15% of respondents will be randomly selected to be re-contacted to complete the questionnaire a second time. If you have any questions, we will be happy to answer them. You can reach us by phone or email, listed below.

Thank you for considering this invitation.

Sincerely,

Dr. Marilyn Langevin
Director of Research
Institute for Stuttering Treatment & Research
Assistant Professor
Department of Speech-Language Pathology
Faculty of Rehabilitation Medicine
780-492-0975
marilyn.langevin@ualberta.ca

Joyce Fok**,** M.Sc.-SLP student
Department of Speech-Language Pathology
Faculty of Rehabilitation Medicine
University of Alberta
jjfok@ualberta.ca

Appendix C: Information Sheet

Institute for Stuttering Treatment and Research (ISTAR)
Communication Improvement Program (CIP)
An Institute of the Faculty of Rehabilitation Medicine, University of Alberta

Title of Research Study:	**Development of a Scale to Measure Parents' Perceptions of their Children's Self-Concept**
Principal Investigator:	**Joyce Fok, M.Sc.-SLP student,** Graduate Student, Department of Speech Pathology and Audiology, University of Alberta
Co-Investigator:	**Dr. Marilyn Langevin,** Assistant Professor, Institute for Stuttering Treatment and Research, Faculty of Rehabilitation Medicine, University of Alberta

Dear Sir/Madame:

Background: Stuttering can negatively impact the psychological, emotional, and social well-being of preschoolers. In order to more fully understand the impact of stuttering we are investigating its impact on self-concept. Self-concept includes self-esteem and self-confidence. We need to know how to validly and reliably measure self-concept. The Self-Description Questionnaire for Preschoolers (SDQP) is a scale that preschoolers complete. However, we want to develop a parent version of the questionnaire so that parents report their child's self-concept.

Purpose: This study will determine whether the parent version of the SDQP validly measures how parents' view their child's self-concept. It will also determine whether parents report the same scores when it is completed a second time.

Procedures: If you decide to participate in this study you will complete a questionnaire. It takes between 5 and 10 minutes to complete. You may complete the questionnaire online. You may or may not be asked to complete the questionnaire a second time one week after completing the first questionnaire. For those who do not complete the questionnaire within one week of receiving access to the questionnaire, up to three reminder emails will be sent.

Possible Benefits for participating in this study: There are no direct benefits to you. We expect that the results of this study will benefit all preschoolers.

Possible Risks for participating in this study: There are no identified risks to you.

Incentives: Participants who submit a completed questionnaire will receive an invitation to complete an online e-ticket for a draw for an ipad. Participants have a 3% chance of winning the ipad. If you were asked to complete the questionnaire a second time, you will receive another invitation to enter a draw to win an ipad mini. You will have a 6% chance of winning the ipad mini.

Confidentiality: Your answers to the questionnaire will be anonymous. No one will know how you answered the questionnaire. The principal investigator will send out and receive questionnaires. An alpha-numeric code will be used to track return of questionnaires. After the receipt of the completed questionnaire, all responses will be de-identified using the alpha-numeric code. Thus, data collected in this study will not identify you by name. Any scientific reports published will not identify you. Personal records relating to this study will be kept confidential. Only researchers involved in the study will have access to the study data.

Voluntary Participation. You are free to decline to participate in this study. You may withdraw your participation in the study at any time.

Implied Consent. Consent to participate is implied by the return of the questionnaire.

Contact Names and Telephone Numbers:

If you have concerns about your rights or any aspect of this study you may contact Charmaine Kabatoff. She is at the Health Research Ethics Board. This office has no affiliation with the investigators.
Charmaine Kabatoff 780-492-0302

If you have any other concerns about this study you may contact the principal investigator, Joyce Fok, or the co-investigator, Dr. Marilyn Langevin:

Joyce Fok jjfok@ualberta.ca.
Dr. Marilyn Langevin 780-492-0975 marilyn.langevin@ualberta.ca

Appendix D: Parent Version of the Self-Description Questionnaire for Preschoolers

SELF DESCRIPTION QUESTIONNAIRE FOR PRESCHOOLERS –PARENT

(Parent version of SDQP; Marsh, Ellis, & Craven, 2002)

Instructions

From this questionnaire, we want to learn about **your perceptions** of what your child thinks, likes, feels, or does.

You may answer the questions by choosing "Yes sometimes", "Yes always", "No sometimes", "No always", or "Cannot state yes or no."

For example, for the question "Does your child like to watch TV?", you would first decide if **your** answer is "Yes" or "No."

If **your** answer is "Yes" then you would decide if your child likes to watch TV sometimes or always and choose "Yes sometimes" or "Yes always."

If **you think** your child does not like to watch TV, you would answer "No sometimes" or "No always."

If you cannot state whether your child would or would not like to watch TV, you would choose the answer "Cannot state yes or no".

Please select your answer.

Today's Date: _____ **Subject No. _____**

SELF DESCRIPTION QUESTIONNAIRE FOR PRESCHOOLERS –PARENT

(Parent version of SDQP; Marsh, Ellis, & Craven, 2002)

PRACTICE ITEMS

1. My child likes to ride his/her bike.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

2 My child likes to clean his/her room.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

1. My child thinks he/she can run fast.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

2. My child thinks he/she is good looking.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

3. My child thinks he/she has lots of friends.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

4. My child thinks he/she likes us (his parents).

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

5. My child thinks he/she enjoys listening to stories.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

6. My child thinks he/she is good at telling time.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

7. My child thinks he/she likes to run and play hard.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

8. My child thinks he/she likes the way he/she looks.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

9. My child thinks that other kids ask him/her to play with them.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

10. My child thinks we (his parents) like him.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

11. My child thinks he/she good at reading.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

12. My child thinks he/she knows lots of different shapes.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

13. My child thinks he/she enjoys sports and games.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

14. My child thinks he/she has a nice looking face.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

15. My child thinks he/she has more friends than other kids.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

16. My child thinks he/she has lots of fun with us (his parents).

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

17. My child thinks he/she enjoys looking at books.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

18. My child thinks he/she likes playing number games.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

19. My child thinks he/she can run a long way without stopping.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

20. My child thinks he/she is better looking that most of his friends.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

21. My child thinks that most of the kids at preschool like him.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

22. My child thinks that we (his parents) play with him a lot.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

23. My child thinks he/she knows lots of letters of the alphabet.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

24. My child thinks he/she is good at counting.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

25. My child thinks he/she is a good sports person.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

26. My child thinks he/she likes the size and shape of his/her body.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

27. My child thinks that other kids want him/her to be their best friend.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

28. My child thinks he/she enjoys doing things with us (his parents).

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

29. My child thinks he/she likes it when people read him/her stories.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

30. My child thinks he/she likes saying numbers.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

31. My child thinks he/she likes to talk to us (his parents).

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

32. My child thinks he/she likes to play outdoor games.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

33. My child thinks he/she is happy with the way he/she looks.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

34. My child thinks he/she plays with lots of kids at preschool.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

35. My child thinks that we (his parents) always listen to him.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

36. My child thinks he/she knows lots of different words.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

37. My child thinks he/she knows lot of different numbers.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

38. My child thinks we (his parents) smile at him a lot.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

Additional items

39. My child thinks he/she is scared of a lot of people.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

40. My child thinks he/she is scared of a lot of things.

No Always	No Sometimes	Yes Sometimes	Yes Always	Cannot State Yes or No
1	2	3	4	0

Finally, we would to ask you some questions about your child. These details will help us put the information you have provided into perspective and will enable us to do some statistical analyses.

1. Gender of your child: ☐ Male ☐ Female

2. Present age of your child: _____years _____months

3. Please tick the following items that describe your child:

   My child…

YES	NO	
☐	☐	stutters
☐	☐	has mild articulation difficulties
☐	☐	has mild phonological difficulties
☐	☐	has hearing difficulties
☐	☐	has physical difficulties
☐	☐	has cognitive difficulties
☐	☐	has diagnosed behavioural difficulties
☐	☐	has other speech and language difficulties (other than stuttering, mild articulation, or phonological problems noted above)

4. If your child stutters, how old was your child when he/she started to stutter? _____years _____months

5. If your child stutters, has your child had any therapy for stuttering?

   ☐ NO
   ☐ YES

6. If your child stutters, please rate your child's current stuttering severity (1 = no stuttering; 10 = severe stuttering):

   ☐ 1 = no stuttering
   ☐ 2
   ☐ 3
   ☐ 4
   ☐ 5
   ☐ 6
   ☐ 7
   ☐ 8
   ☐ 9
   ☐ 10 = severe stuttering

8. Who completed this questionnaire?

   ☐ Mother ☐ Father ☐ Both Parents ☐ Other

Thank you for taking time to complete this questionnaire. Your input is much appreciated!

If you would like to make any comments, please do so on the reverse side of this page**.**