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Young Children's Psychological Selves:

Convergence with Maternal Reports of Child Personality

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Abstract

The present research examined 5-year-old children's psychological self-concepts. Nonlinear Factor Analysis was used to model the latent structure of the Children's Self-View Questionnaire (CSVQ; Eder, 1990), a measure of children's self-concepts. The coherence and reliability of the emerging factor structure indicated that young children are capable of meaningfully reporting about their own emotions and personalities. Moreover, these self-reports from 5-year-olds converged with maternal perceptions of child personality. Results are discussed in terms of their implications for the study of emergent personality, continuity/discontinuity in personality assessment across the lifespan, and self-concept formation in early childhood.

Keywords: self-concept, child personality, mother-child agreement, personality structure

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Children's self-concepts have been theoretically linked to a number of intra- and inter- personal developmental outcomes, including social acceptance and school adjustment (e.g., Harter, 1998; Verschueren, Marcoen, & Schoefs, 1996). Indeed, it has been suggested that the self-concept can be considered "the cornerstone of both social and emotional development" (Kagen, Moore, & Bredekamp, 1995, p. 18). In recent years, significant theoretical and empirical progress has been made in the study of children's self-concepts (see Harter, 1998, for a review). Unfortunately, however, past research has focused almost exclusively on school-aged children and adolescents. Despite the importance of the self-concept to the developing child, very little research has examined the self-concepts of young children (see Eder, 1989; Marsh, Craven, & Debus, 1991 for some notable exceptions).

In light of this, the present research was designed to address two important issues relevant to understanding self-concept development in young children. The first goal was to model the underlying structure of 5-year-olds' responses to a self-concept questionnaire designed for use with young children. The second goal was to explore how children's self-concepts map onto mothers' perceptions of child personality.

Measurement Issues

The lack of knowledge about young children's self-concepts can be largely attributed to difficulties inherent in developing assessments that capture young children's understanding of their own psychological characteristics. Indeed, previous research on young children's self-concepts was plagued by several problems, not the least of which

was asking children to do things they were simply not capable of doing. In adults and older children, a common approach for measuring self-concept asks respondents to complete a series of open-ended sentences (i.e., "I am ____"). However, this approach has been unsuccessful when used with young children who lack the cognitive and linguistic ability to reliably and validly describe themselves. Rather than providing internal, psychological descriptions, young children tend to focus almost entirely on physical traits and/or possessions (e.g., Keller, Ford, & Meacham, 1978). Consequently, researchers erroneously concluded that children younger than 8 years old either did not possess a meaningful understanding of their psychological selves, or they were unable to express this psychological self-concept in a meaningful way (e.g., Hart & Damon, 1986; Ruble & Rholes, 1981). Even in research with older children, these open-ended questions don't seem to produce reliable and well-defined self-concept factors. As a result, much of that work has relied on traditional likert-type measures that may also be inappropriate for young children (see Davis-Kean & Sandler, 2001 for a review).

In addition, self-concept research with children has been plagued by definitional problems. Researchers have largely failed to reach a consensus about what content domains the self-concept should include. Harter (1998), for example, discusses the self-concept largely in terms of children's perceptions of their own value, worth, and talent. It is this operational definition of self-concept that has historically dominated interest in the field. In contrast, researchers such as Marsh, Ellis, and Craven (2002) have provided a more layered conceptualization of the self-concept which argues for expanding the content domain for self-concept research with young children. Although this work has incorporated some social and emotional self-concept scales (particularly with older

children), many items are focused on children's ratings of their abilities. However, some researchers have suggested that children younger than 8 years old may give inaccurate reports of their own abilities (Harter, 1998; Harter & Pike, 1984; Ruble & Frey, 1991). Even though this may be true, it is important to conceptually distinguish between self-perceptions of *abilities or achievement*, and self-perceptions of *feelings or personality traits*. Although both approaches to the definition of self-concept have been addressed to some extent (most notably in Harter's work; e.g., 1982, 1984, 1998), considerably less emphasis has been placed on self-perceptions of emotional and personality characteristics. Historically, the options available to researchers investigating children's self-concepts have been fairly limited both in methodology (see Fantuzzo, McDermott, Manz, Hampton, & Burdick, 1996), and the ways in which the self-concept is conceptualized (see Byrne, 1996; and Wylie, 1989 for reviews).

Recent research has attempted to circumvent these definitional and methodological shortcomings by creating more developmentally sensitive measures of self-concept in young children. One important innovation is the development of "puppet" questionnaires, such as the Children's Self-View Questionnaire (CSVQ; Eder, 1990, 1992) and the Berkeley Puppet Interview (BPI; Measelle, Ablow, Cowan, & Cowan, 1998). These instruments are measures in which children watch two puppets making competing statements, and are asked to choose which statement in each pair they agree with. In addition to avoiding the difficulties associated with administering open-ended questionnaires to young children, this work has sought to expand the study of self-concept development to the assessment of children's emotions and personality. In fact, CSVQ items are directly based on Tellegen's (1985) lower-order personality dimensions

that have formed the basis for a widely-used measure of adult personality (Multidimensional Personality Questionnaire; Tellegen, 1985) and much subsequent research (see Patrick, Curtin, & Tellegen, 2002, for a review). Research using these tools has challenged the long-held views of self-concept development by revealing that children may possess psychological self-concepts at an earlier age than had previously been expected (e.g., Eder & Mangelsdorf, 1997; Marsh et al., 2002; Measelle et al., 1998).

Several studies have examined the structure and correlates of these self-concept instruments in detail. Using the CSVQ, Eder (1990; Eder & Mangelsdorf, 1997) concluded that 3-, 5-, and 7-year-olds' responses to self-concept items showed reasonable internal reliability along three theoretically-derived dimensions. Likewise, Measelle, Ablow, Cowan, & Cowan (1998) found that 4-7 year-old children's responses to theoretically derived BPI scales (that included academic, social, and emotional dimensions) were internally consistent. Results from each of these studies suggest that very young children can possess coherent self-concepts, but may lack the linguistic capacity to express them through more complicated or age-inappropriate measures. Furthermore, Measelle et al. (1998) found that 4-7 year-old children's BPI scale scores were modestly associated with mothers', fathers', and teachers' behavioral ratings of these children (see also Arseneault, Kim-Cohen, Taylor, Caspi, & Moffitt, 2005).

However, similar investigations have not been undertaken with the CSVQ, such that the correlates of this measure remain largely unknown. This is unfortunate given some of the unique advantages of the CSVQ. In particular, the CSVQ incorporates some content domains, most notably sadness, anxiety, anger, and aggression, that have not

been present in some previous work validating BPI responses with 5-year-olds (although these items were present in slightly older samples; Measelle et al., 1998, 2005). Furthermore, all CSVQ items were designed with an exclusive focus on ascertaining children's self-perceptions of personality, as opposed to the BPI which devotes one subscale to academic competence. Additionally, the utility of the BPI has been largely in its ability to detect psychopathology and conduct problems in childhood (e.g., Arseneault et al., 2005). In contrast, CSVQ items are designed to capture the normal range of emotions and behavior in young children, and may therefore do a better job of tapping into the self-concepts of children in normative samples. Further work is needed to determine the extent to which this measure (and others) may be distinctively advantageous for the study of self-concept development.

Despite the appeal of these puppet-based instruments, there remains no clear consensus regarding the best approach to self-concept measurement in early childhood (see Davis-Kean & Sandler, 2001 for a comprehensive review). Indeed, some researchers have suggested that asking children simple and straightforward questions may be the best method for acquiring reliable responses (e.g., Damon & Hart, 1988; Marsh et al., 1991; Mischel, Zeiss, & Zeiss, 1974). Other measures such as the Pictorial Scale of Perceived Competence and Social Acceptance (Harter & Pike, 1984) make use of pictorial cues as well as likert-type rating scales in the assessment of self-concept (but see Fantuzzo et al., 1996 for some limitations). Overall, Davis-Kean & Sandler's (2001) meta-analysis suggested that likert scales (vs. dichotomous responses) and questionnaires (vs. picture/puppet instruments) may have some advantages in use with older children. However, there was insufficient evidence to fully evaluate the relative effectiveness of

these characteristics with 4-5 year old children. The authors conclude that we cannot yet determine the success of these measures with young children, and that more stringent examination of new and already existing self-concept measures is a necessity in the field (Davis-Kean & Sandler, 2001).

Puppet-based questionnaires like the CSVQ are no exception to this claim. Despite the benefits that these measures provide for self-concept researchers, other aspects of measure development have not been vigorously pursued. These instruments have been offered as replacements for more traditional self-concept measures, but have not been subjected to close scrutiny in terms of their psychometric properties. Although the CSVQ has a more straightforward scoring procedure than the BPI, the CSVQ has remained largely underutilized, in part because researchers have not focused on the evaluation and validation of a reliable factor structure for this measure. Eder (1990) originally established three higher-order self-concept dimensions for 5-year-old children, but these dimensions were based on only moderately reliable subscales (ranging from .41 - .60 with a mean alpha of .52) and a relatively small sample size of 61 children. Eder (1992) created a revised version of the CSVQ with additional items, but kept the same lower- and higher-order dimensions. This version has since been used in several investigations (e.g., Eder & Mangelsdorf, 1997; Goodvin, Meyer, Thompson, & Hayes, under review; Thompson, Buckley, Schoppe-Sullivan, & Snyder, 2006), although it has not undergone rigorous methodological scrutiny. Moreover, subsequent research (Agathen, 1999; Agathen & Mangelsdorf, in preparation) has failed to replicate Eder's three higher-order factors. The failure to replicate Eder's original factor structure has limited the measure's utility and has called into question the factorial validity of the

original CSVQ dimensions. A detailed examination of the CSVQ's latent structure is essential for the development of a more reliable, precise, and powerful self-concept measure.

As Marsh, Debus, and Bornholt (2004) and Shavelson (1976) have argued, the history of self-concept research has emphasized identifying the external correlates of children's self-concepts at the expense of establishing internally valid and reliable measures. A necessary first step in examining the construct validity of these newer measures of self-concept in young children is understanding the content and structure of the self-concept dimensions derived from these measures. One shortcoming of past research is that the quantitative approaches to self-concept measurement have not been appropriate for capturing the underlying structure of the self-concept in early childhood (Marsh et al., 2004). Indeed, Marsh et al. (2004) argue that measures such as the CSVQ could benefit greatly from the application of various factor analytic tools, especially confirmatory factor analysis. Further exploring the psychometric properties of the CSVQ (and other self-concept measures) could be invaluable in advancing our understanding of young children's self-concepts, and the ways in which they can best be captured.

Conceptual/Theoretical Issues

Although many researchers acknowledge that self-concepts are formed in the context of interpersonal relationships (e.g., Harter, 1998), the social processes involved in self-concept formation have not been elaborated. Harter (1998) proposes that self-concept development in middle childhood is fueled by social comparisons with peers. But what are the social mechanisms that may be associated with self-concept development in early childhood?

Some work has posited that the self-concept emerges as a result of the interaction between emotional tendencies and parent-child relationships, and this emergent self-concept serves as the basis for personality development (e.g., Eder & Mangelsdorf, 1997; Thompson, 1998). Specifically, it seems likely that parents who describe their children in emotional terms: a) teach their children how to label those specific emotions, and b) increase the likelihood that those emotions will be incorporated into the children's self-concept. Indeed, some research (e.g., Welch-Ross, Fasig, & Farrar, 1999) indicates that reference to emotion in parent-child conversation is related to the structure of children's self-concepts. As the central social figures of early childhood, parents may play a very particular role in the process of self-concept formation via their unique investment in their children, and how the children come to see themselves. Some support for this perspective can be found in the emotion socialization literature, which argues that parents play a primary role in helping children internalize and express emotions both by modeling emotional reactivity and engaging in more explicit socialization behaviors (Eisenberg, Cumberland, & Spinrad, 1998; Eisenberg, Spinrad, & Cumberland, 1998).

This body of work argues that parents help set the stage for early personality development by integrating early emotion into their children's self-concepts (see Thompson, 1998). If this is true, then we might expect children's self-concepts to be associated with parents' views of their emotional and personality characteristics. A necessary (albeit preliminary) first step in examining parents' potential influence on the self-concept is determining whether children's self-concepts indeed reflect the perceptions of their parents.

Nonetheless, research to date has not sufficiently examined convergence between mothers' perceptions of their children and children's self-concepts in early childhood. Most studies that explore child personality have relied almost exclusively on others' reports of children's behavior -- especially parental reports (Mangelsdorf, Schoppe, & Buur, 2000). This reliance on parental reports could be problematic when examining children's emotional traits, given that certain emotions may best be captured by self-reports of one's own feelings. Thus, it may be particularly important to rely not only on others' perceptions of children's emotions, but on children's self-perceptions as well.

The Present Study

The primary goal for the present study was examining the structure and correlates of the CSVQ. First, we hoped to capitalize on advancements in quantitative methods that allow us to more appropriately examine the CSVQ items, and thus better capture the structure of 5-year-olds' psychological selves. Using a larger sample, and more advanced statistical techniques, we anticipated that the CSVQ can indeed be an informative measure of children's self-concepts. Coherent personality dimensions would indicate that children as young as 5 years old also possess at least a rudimentary understanding of their own emotions and personality.

A second goal was to examine how the self-concept structure derived in this study converged with maternal reports of child personality. In addition to increasing our understanding of self-other personality agreement in early childhood, such an investigation can be one building block for future research into the social process of self-concept development. Based on the facts that 1) there is little prior work linking these

reports, and 2) the appropriate factor structure of our self-concept measure remains an empirical question for the present study, this examination is largely exploratory.

Method

Participants

One hundred fourteen children participated in this study. All but two of their mothers participated, leaving the number of mother-child pairs at 112. The children ranged in age from 5 years, 2 months to 5 years, 11 months. The average age was 5 years, 6 months. Fifty-nine of the children were girls, and 53 were boys. Almost all of the children were European-American.

The families were predominantly middle-class, with an average annual family income of approximately $45,000. Fifty-eight percent of the mothers, and 92% of the fathers, were employed; 72% of the mothers had attended or graduated from college, and an additional 22% had earned advanced degrees. The mothers' average age was 34.

Procedure

Participants were recruited by phone. Names were obtained from a subject file maintained by the Psychology Department, based on birth announcements that had appeared in the local newspaper. Mothers were asked if they and their children would participate in a study of children's early personality development. Seventy-five of the participants were part of an ongoing longitudinal study that had begun when the children were 4 years old. The additional 39 participants were recruited solely for the purposes of the present study when they were 5 years old. There were no demographic differences between the two samples.

Shortly after recruitment, the mother and child came into the lab for a brief visit. After a brief warm-up period, a researcher took the child into a room to complete the videotaped CSVQ. During this period the mother was in an adjacent room in the laboratory, where she completed the California Child Q-set (CCQ; Block & Block, 1980). The CSVQ session typically lasted for 30-35 minutes, at which point the child and mother were reunited.

Measures

The Children's Self-view Questionnaire (CSVQ; Eder, 1992). The CSVQ assesses young children's psychological self-view, or self-concept, with 62 questions, incorporating contrasting statements made by two puppets. A videotape version of the CSVQ in which children participate in a game entitled "Who am I?" was used in this study. For each of the CSVQ items, two puppets make competing statements about their behavior, feelings, or the way that other people behave towards them (e.g., "I am usually happy" vs. "I am not usually very happy"). Children are asked to choose which of the two puppets' statements they agree with (i.e., "How about you? Are you usually happy or are you not usually very happy?"). Children's answers are recorded by the research assistant after each item. Children were occasionally offered a snack and stickers to help maintain their interest. The tape lasts approximately 26 minutes without interruption. The CSVQ was developed for use with several different age groups, and originally was designed to represent nine lower-order self-concept dimensions for each age level. The 9 scales for children about 5 ½ years of age (incorporating 41 total items) are: Achievement, Aggression, Alienation, Harm-Avoidance, Social Closeness, Social Potency, Stress Reaction, Traditionalism, and Well-Being. Thus, although a number of

childhood self-concept measures have included items assessing self perceptions of academic or athletic competence (e.g., Marsh et al., 1991), or overall appraisals of self-worth (e.g., Harter, 1982), the CSVQ is intended purely to measure self-views with respect to social, emotional, and personality characteristics.

The child personality measure: the California Child Q-Set (CCQ; Block & Block, 1980). The CCQ was chosen as the maternal report measure in the present study. Because congruence between mothers and children would have implications for the measurement of early personality, we chose a measure that is intended to tap into adults' perceptions of child personality. This allowed us to examine the degree to which our measure of children's self-perceived personality converges with a more traditional measure of child personality. That is, what are the relations between how adults (particularly parents) commonly assess child personality and how children assess their own personality? The CCQ serves this function well, as a great deal of research has confirmed the reliability and validity of this tool (e.g.,; Block, Block, & Morrison, 1981; Caspi, Block, Block, Klopp, Lynam, Moffitt, & Stouthamer-Loeber, 1992; Dollinger, 1992; John, Caspi, Robins, Moffit, and Stouthamer-Loeber, 1994; Weir & Gjerde, 2002; Parker & Stumpf, 1998). Furthermore, this instrument has commonly been used with *mothers* as a way to assess child personality (e.g., Caspi et al., 1992; John et al., 1992; van Aken & van Lieshout, 1991; van Lieshout, DeMeyer, Curtis, & Fryns, 1998; Wessels, Lamb, Hwang, & Broberg, 1997).

The version of the CCQ used in this study is a set of 100 statements describing various aspects of young children's behavior. This study utilized the common-language version of this measure to allow easier comprehension for mothers of all education levels

(Caspi et al., 1992). The items, taken as a whole, are meant to assess mothers' perceptions of their children's personality. The statements appear on 100 separate index cards, and mothers were asked to place each of these cards into one of 9 piles. The piles ranged on a continuum from 1 = most like my child to 9 = least like my child. The piles were arranged according to a fixed, quasi-normal distribution, such that the "5" pile contained the most cards, while the "1" and "9" piles (the two extremes) contained the fewest.

Although this measure was originally designed to assess Block and Block's (1980) dimensions of ego-resiliency and ego-control, John, Caspi, Robins, Moffit, and Stouthamer-Loeber (1994) have developed a method for scoring the CCQ in which individual items are grouped conceptually to represent the Five-Factor Model of Personality (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience; e.g., McCrae & Costa, 1999). These dimensions more closely map onto the individual items and theoretical underpinnings of the CSVQ, which was based on Tellegen's (1985) work with adults (including higher-order factors of Positive Affect, Negative Affect, and Constraint). Furthermore, this allows us to examine whether a theoretical framework that has been of great interest in adult personality research (see McCrae & Costa, 1996 for one review) may also be useful for studying the emergent personality in early childhood.

Upon completion of the sort, each item is assigned the number that corresponds to the pile in which it was placed. The sum of all individual items in a dimension represents the child's score for that dimension. Thus, this analysis yields a raw score for each of the Big Five personality constructs: extraversion (M = 55.9, SD = 7.4), agreeableness (M =

81.6, *SD* = 9.5), conscientiousness (*M* = 48.6, *SD* = 5.9), neuroticism (*M* = 38.6, *SD* = 7.7), and openness to experience (*M* = 42.7, *SD* = 6.0). The alphas for these dimensions ranged from .55 to .72, with a mean value of .62. The overall reliability scores for these scales are slightly lower than in John et al.'s (1995) conceptualization, probably due to the fact that they were originally designed for use with adolescent boys. However, the Big Five scales in the present study are overall slightly more reliable than in previous studies of younger children (Lamb, Chuang, Wessels, Broberg, & Hwang, 2002). Deleting several of the CCQ items could have raised alphas of 3 scales only very slightly, so we chose to include all items so as to allow for comparisons across other studies.

Intercorrelations among the scales ranged from an absolute value of .01 to .36, with an average magnitude of .18. Only 4 of the 10 intercorrelations exceeded an absolute value of .20, and none reached .40. Thus, the pattern of intercorrelations was very similar to what has been found in large-scale studies of the Five Factor Model in adults (John & Srivastava, 1999). There were significant correlations between extraversion and neuroticism (r = -.35, $p < .001$), agreeableness and conscientiousness (r = .29, $p < .01$), conscientiousness and neuroticism (r = -.36, $p < .001$), and neuroticism and openness to experience (r = .30, $p < .01$). These correlations are also quite consistent with findings from previous investigations using this measure (John et al., 1994).

Results

Analyses were conducted and will be reported in two separate sets. The first set was aimed at uncovering the structure of children's self-concepts by comparing results of confirmatory and exploratory factor analyses of the CSVQ. The second set of analyses

examined the associations between the derived self-concept dimensions and mothers' reports of their children's personalities. All significance tests were two-tailed.

Structure of Children's Self-Concepts

The first set of analyses attempted to establish a reliable and conceptually meaningful factor structure for the CSVQ. These analyses address a number of deficiencies in previous examinations of the CSVQ. These prior deficiencies include low internal reliability in Eder's (1990) original self-concept dimensions, and a failure to replicate these dimensions in subsequent research (Agathen, 1999; Agathen & Mangelsdorf, in preparation). Given that 1) the present study has a larger sample size than any that has previously used the CSVQ; 2) The CSVQ's original dimensions did not have high internal reliability in Eder's (1990) sample; 3) previous scale-level examinations of the CSVQ have not replicated the original factor structure (Agathen, 1999; Agathen & Mangelsdorf, in preparation); and 4) these factor analyses have looked at the groupings of scales and not individual CSVQ items, it is appropriate and necessary to conduct factor analyses at the *item* level to determine the underlying factor structure of the CSVQ.

Since CSVQ data are dichotomous, we performed non-linear factor analyses to investigate the factor structure. These procedures were conducted using the NOHARM statistical software (Normal Ogive Harmonic Analysis Robust Method; Fraser & McDonald, 1988). Although previous self-concept research with binary data has used classical linear factor-analytic methods (Measelle et al., 1998), this approach has a number of limitations (Waller, Tellegen, McDonald, & Lykken, 1996). Waller et al. (1996) suggest that the linear factor analysis model is not appropriate for dichotomously

scored personality items (such as those in the CSVQ), in part because it is likely to produce spurious factors. For these reasons we chose to proceed based upon the non-linear model. Tanaka (1987) emphasized that a lower limit of 100 subjects is reasonable for developmental research that is based on individually-administered responses from young children. Indeed, Marsh et al. (2002) argue that factor analytic techniques are appropriate, and even desirable (see Marsh et al., 2004), for self-concept research with 100 children – a threshold that the current study exceeds.

Some research has correctly noted that larger sample sizes are more ideal for accurately assessing dimensionality with non-linear factor analysis (e.g., Tate, 2003). Nonetheless, Tate's (2003) analysis also concluded that the performance of even the exploratory version of NOHARM was good to excellent in detecting dimensionality of dichotomous test items. Furthermore, DeChamplain and Gessaroli (1998) showed that NOHARM correctly detected dimensionality in even relatively small simulated samples. Clearly, a greater sample size is desirable for non-linear factor analysis. However, the unweighted least squares estimation procedure used in NOHARM does not make distribution assumptions, thus making it appropriate even for smaller sample sizes (i.e., around 100) such as our own (Maydeu-Olivares, 2001).

In examining NOHARM output, the Root Mean Squared Residual serves as an index summarizing the residual covariance matrices. This value should approach zero if the proposed model fits the data well (Waller et al., 1996). Browne and Cudeck (1993) suggest that a Root Mean Squared Residual value of .08 or less is reasonable.

Confirmatory Factor Analyses (CFA). Following suggestions by Marsh et al. (2004), we first conducted CFA based on the original factor structure of the CSVQ.

Eder's higher- and lower-order dimensions were the most logical candidates for confirmation, given that they represent the measure's original scale construction and are the only dimensions that have been reported in previous published research with the CSVQ (e.g., Welch-Ross et al., 1999; Buckner & Fivush, 1998). Pattern matrices were created that specified which CSVQ items either did or did not load onto a specified factor. The first specified model matched Eder's description of three higher-order dimensions for 5-year-olds (Self-Control, Self-Acceptance via Achievement, and Self-Acceptance via Affiliation; see Eder, 1990 for full factor listings). CFA using this model yielded an acceptable goodness-of-fit for this dataset (Root Mean Squared Residual = .021). However, internal reliability on the individual scales was relatively low, as Cronbach's alphas ranged from .13 - .53 with a mean of .36 (see Table 1).

We next attempted to confirm the original 9 lower-order CSVQ dimensions (Achievement, Aggression, Alienation, Harm-Avoidance, Social Closeness, Social Potency, Stress Reaction, Traditionalism, Well-Being; Eder, 1990). Again, the data seemed to fit this overall model fairly well, as the analysis yielded adequate goodness-of-fit (Root Mean Squared Residual = .018). Nonetheless, reliability was also rather low for this structure, as Cronbach's alphas ranged from -.02 - .57 with a mean of .38 (see Table 1).

Exploratory Factor Analysis (EFA). Given the relatively low internal reliability when fitting Eder's original dimensions to these data, and the lack of previous attempts to conduct item-level explorations of the CSVQ factor structure, we next conducted a series of non-linear EFAs. Although the NOHARM program conducts EFA, the researcher is required to specify the number of factors to be created. Based on the relatively little

research that has previously incorporated the CSVQ measure, EFAs were conducted in which 3 (the number of factors that Eder originally proposed), 5 (a widely used structure in the study of adult personality), and 4 (the midpoint between these two) factors were specified.

The resulting three-factor solution yielded an acceptable goodness-of-fit statistic (Root Mean Squared Residual = .016). The four- and five- factor solutions had root mean squared residual values of .014 and .013, respectively. This suggests that a three-factor solution could not be improved upon substantially.

In order to avoid ambiguity, final factor construction proceeded by attempting to assign each item to a single factor. Factor loadings were determined by promax (oblique) rotation. Only items that loaded more than an absolute value of .40 on a single factor were assigned to that factor. Twenty-eight items did not load highly on any factors, and thus failed to reach this criterion. Three other items were also dropped because they loaded more than an absolute value of .30 on two different factors. Therefore, 31 items that either failed to load heavily onto any of the factors, or loaded highly on multiple factors, were excluded from the factor construction. These decision rules were adopted to ensure that the resulting factors contained only items that made substantial contributions to the underlying structure, rather than forcing items that were not essential to any one factor (or loaded equally on more than one factor).

A subsequent analysis at the conceptual level also supported the selection of the three-factor model as clearly the most reasonable. This solution produced three clear and distinct factors, discussed below. On the other hand, one factor in the four factor solution lacked conceptual clarity (a combination of social potency and obedience to authority),

and two factors in the five-factor solution failed to make much conceptual sense (the aforementioned social potency + obedience to authority factor, and a fifth factor that paired high timidity with high well-being). Thus, at least in this sample, a three-factor model is the most parsimonious and appropriate conceptualization of the structure of 5-year-olds' self-concepts.

The items that make up each factor (including factor loadings and Cronbach's alphas) are listed in Table 2 in their entirety. The factor means represent the mean number of items endorsed by children for that factor. Each child chose one of two competing statements for every CSVQ item, so children that did not endorse one of these listed statements (i.e., "I don't like to watch other people fight") necessarily endorsed the opposing statement (i.e., "I like to watch people fight"). The first factor, labelled *Timidity* (M = 4.8, SD = 2.1), describes children who tend to avoid harm and risk-taking activities. The second factor, labelled *Agreeableness* (M = 11.3, SD = 2.4), is a combination of sociability, extraversion, and conscientious good behavior. The third factor, labelled *Negative Affect* (M = 2.0, SD = 2.1), can best be understood as portraying neurotic, stress reactive, and worry-prone children. Although the correlation between Agreeableness and Negative Affect was marginally significant, (r = .18, p < .10), Timidity was virtually unrelated to either Agreeableness (r = .02, n.s.) or Negative Affect (r = .02, n.s.). Thus, these three factors can be thought of as largely orthogonal constructs. The Cronbach's alpha reliabilities for the constructs ranged from .68 - .72, with a mean of .71 (see Table 1).

In comparing results of the CFA and EFA, there are some clear distinctions. Although each model fits the data quite well, the exploratory solution showed slightly

better goodness-of-fit than the confirmatory solution for both the original higher- and lower- order dimensions. Furthermore, the exploratory factor structure showed considerably higher internal reliability (mean α = .71) than the original CSVQ higher-order (mean α = .36) and lower-order (mean α = .38) dimensions, and was in fact the only factor structure that can reasonably be considered internally reliable. Although EFA reliability results (but not CFA results) benefited from eliminating items that did not load highly on any of the factors, these reliability discrepancies were not simply the result of one or two outlying items or scales. On the contrary, whereas *none* of Eder's (1990) higher- or lower-order scales exceeded a Cronbach's alpha of .57, all three of the factors which emerged from EFA had a Cronbach's alpha of at least .68. In summary, because the three-factor exploratory structure 1) provided a good fit for these data, and 2) showed relatively high levels of internal reliability, the EFA factors -- Timidity, Agreeableness, and Negative Affect -- were used in subsequent analyses.

From a conceptual standpoint, it is interesting to note that the factors derived from this exploratory analysis are similar to the higher-order factors of the MPQ (Tellegen, 1985), the adult personality questionnaire on which the CSVQ was based. Our CSVQ factor of Negative Affect clearly aligns with the Negative Affectivity MPQ factor, which is comprised primarily of alienation, stress reactivity, aggression, and low well-being. The MPQ factor of Positive Affectivity is also fairly similar to our CSVQ Agreeableness factor. Agreeableness items focus heavily on children's desire to be liked by peers, parents, and teachers, and MPQ Positive Affectivity also incorporates the dimensions of social potency, social closeness, and achievement, along with high well-being. Additionally, our Timidity factor seems to provide a reasonable analogue for the MPQ

higher-order factor of Constraint. The dimensions of harm-avoidance, control, and traditionalism that comprise Constraint are all clearly seen in our Timidity factor – which places a particularly strong emphasis on harm-avoidant behaviors.

Correlational Analyses: Associations Between Mothers' Reports of Child Personality and Children's Self-Concepts

Pearson correlations were computed to examine the extent to which maternal reports of their children's personality were similar to children's self-concepts. The three CSVQ factors were significantly correlated with a number of the Big Five personality dimensions that were derived from the CCQ (see Table 3). Children who saw themselves as high on Timidity were judged by their mothers as being high on neuroticism (r = .26, p < .01), and low on extraversion (r = -.33, p < .001) and openness to experience (r = -.26, p < .01). Children who rated high on self-reported Agreeableness were indeed seen as more agreeable by their mothers (r = .38, p < .001). Children's self-reported Negative Affect was negatively related to maternal reports of conscientiousness (r = -.26, p < .01), and positively related to mothers' reports of neuroticism (r = .30, p = .001).

Regression Analyses: Predicting Children's Self-Concepts From Mothers' Reports of Child Personality

A series of regression analyses were next conducted to further explore the unique and cumulative effects of mother-reported personality dimensions on the prediction of children's self-concepts. Mothers' reports of child personality were entered as independent variables, and children's self-concepts were selected as dependent variables. Separate regression analyses were ran for each dependent variable, but each included a single block that contained all predictor variables. This was done to determine the unique

contribution of each mother-reported personality dimension (even after accounting for all other child personality variables) to variance in children's self-concepts. If these measures showed some level of convergent (as well as discriminant) validity, we might expect high self-reported Timidity to be predicted by lower levels of mother-reported extraversion. Likewise, greater levels of self-perceived Agreeableness and Negative Affect should be uniquely predicted by mothers' reports of children's high agreeableness and high neuroticism, respectively.

Timidity. The five personality variables together accounted for 17 % of the variance in children's self-reports of Timidity (overall $F = 4.36$, $p = .001$). Specifically, maternal reports of (low) extraversion and (low) openness to experience were both significant predictors of children's reports of Timidity (see Table 3). Although neuroticism showed a significant bivariate association with children's reports of Timidity, this relationship was not present when simultaneously accounting for all child personality dimensions.

Agreeableness. Maternal reports of children's Big Five personality dimensions combined to explain 16 % of the variance in Agreeableness self-concept reports (overall $F = 4.00$, $p < .01$). Similar to the bivariate analyses, mothers' reports of high child agreeableness was the only significant predictor of child-reported Agreeableness (see Table 3). These results confirm that the Agreeableness self-concept dimension seems to be singularly associated with maternal reports of their children's agreeableness.

Negative Affect. Maternal reports of all child personality dimensions together explained 13 % of the variance in children's Negative Affect self-reports (overall $F = 3.21$, $p = .01$). After controlling for all dimensions, high mother-reported neuroticism

remained a significant predictor of children's Negative Affect self-concept factor (see Table 3). Although maternal reports of children's conscientiousness was significantly correlated with CSVQ Negative Affect in bivariate analyses, this association was reduced to non-significance when all personality variables were considered simultaneously. These results support the conclusion that mothers' reports of their children's neuroticism are uniquely predictive of children's self-reported Negative Affect.

Discussion

The results of the current study offer evidence that young children are able to provide valuable information about their own personalities. Specifically, this investigation indicated that young children's self-concepts reflect a coherent structure that is meaningfully related to mothers' reports of child personality.

Self-Concept Structure

Interestingly, this exploration of the CSVQ yielded a coherent factor structure that differs from the measure's original structure. The reasonably high degree of internal consistency within each factor suggests that children did indeed respond to these items in a consistent fashion, and provided some evidence of children's dispositional understanding of emotions and personality traits. This evidence is bolstered by the methodological and conceptual advances with which this self-concept structure was derived. The use of non-linear factor analysis (Fraser & McDonald, 1988) allowed for the examination of the CSVQ measure at the item-level, an examination that has been absent since the measure's conception. This technique subsequently produced a novel latent structure for children's self-concepts, rather than relying on the original

conceptualization of the CSVQ factor structure -- which showed (at best) only modest reliability in this sample.

It is noteworthy that even this exploratory technique yielded the three conceptually meaningful factors of Timidity, Agreeableness, and Negative Affect. This three-factor solution provides more conceptual clarity than Eder's (1990) proposed three-factor structure of Self-Control, Self-Acceptance via Achievement, and Self-Acceptance via Affiliation. In addition, these factors map relatively well onto those of the MPQ adult personality measure, from which the CSVQ was originally derived. Although the failure to replicate either of the original factor structures is initially disconcerting, it does indeed seem that the solution in this study taps into the measure's *theoretical* underpinnings with some level of success. This suggests that the unsatisfactory performance of the original dimensions may represent previously inadequate scale construction of this measure, rather than an inadequate conceptual foundation.

Furthermore, this measure assesses a different set of factors than are often assessed through observations of child behavior. A number of researchers believe that a reliable set of temperamental characteristics can be measured via behavioral observations. The temperament dimensions that emerge through observations of 3-5-year-old children tend to capture many of the same emotional qualities represented by the Timidity and Negative Affect self-concept dimensions identified in this study (e.g., Caspi, Harrington, Milne, Amell, Theodore, & Moffit, 2003; Caspi, Henry, McGee, Moffitt, & Silva, 1995). However, many of the characteristics that comprise the present study's Agreeableness dimension are absent from observers' reports. Although agreeableness is considered an important trait in early childhood, this characteristic is

often not included in models of temperament or observational measures of child behavior (Laursen, Pulkkinen & Adams, 2002; Shiner & Caspi, 2003). Thus, the CSVQ may allow researchers to assess a psychological dimension of 5- year-old children that is not easily captured by observations. Specifically, timidity and negative affect deal with children's emotional reactions, whereas agreeableness deals with how children see themselves in relation to others. This aspect of the self-concept may closely resemble dimensions of adult personality, thus allowing agreeableness to be tracked across time with implications for child adjustment. It may well be a particularly salient dimension for 5-year-old children, who must deal with the challenges of an expanding social environment and an expanding set of social expectations.

Associations Between Children's Self-Concepts and Maternal Reports of Child Personality

Perhaps the more interesting aspect of our results comes from the meaningful associations between the self-concepts of 5-year-olds and mothers' descriptions of their children's behavior. Interestingly, the dimensions of the Five Factor Model of personality traits clearly mapped onto children's self-concepts. Children who see themselves as timid are described by their mothers as being primarily introverted and not open to new experiences. Likewise, children who report being highly agreeable have mothers who describe them in the same way. Additionally, mothers who see their children as being more neurotic have children who report greater levels of negative affect. The clarity of these results is highlighted by the fact that each self-concept dimension is most strongly associated with the personality dimension that is most conceptually similar. That is, children's self-reports of timidity, agreeableness, and

negative affect were most strongly associated with mothers' reports of extraversion, agreeableness, and neuroticism, respectively.

Taken as a whole, these associations suggest that mothers and children are generally in agreement when it comes to their perceptions of the child's personality and emotionality. Although the associations between mothers' and children's reports were in the small to moderate range, they are similar in magnitude to those found when assessing self-other agreement (on identical personality measures) in the adult personality literature (see Funder & Colvin, 1997; Mangelsdorf, Schoppe, & Buur, 2000). Given that one of the informants in our research was a 5-year-old child, the magnitude of these results is fairly impressive. Our results are noteworthy in suggesting that mothers and young children show some agreement (albeit across different measures), in the way children's personalities are viewed. This is important both methodologically and conceptually, given the dearth of research examining relations between maternal reports of child personality and children's self-concepts in early childhood.

Implications for Self-Concept and Personality Measurement

These findings may also have implications for the study of personality development across the lifespan. The measurement of change and continuity in personality development has been a topic of interest for many researchers (see Roberts & DelVecchio, 2000, for a review). However, progress in this field has been hampered by the use of different methodologies when measuring adult and child personality. Whereas child personality researchers rely heavily on observers' reports, adult personality research is almost entirely reliant upon self-reports of personality characteristics. In part because of this contrast, researchers who study adult personality and those who study child

personality have heretofore remained largely distinct in the theory, methods, and terminology that they employ. The present study provides an argument for beginning to merge these two disparate domains (see Roberts, 2005 for a similar suggestion). Five-year-olds seem capable of providing reports about their own personalities and emotional dispositions. Thus, this instrument may be used to provide greater methodological continuity in tracking personality development across childhood and from childhood to adulthood. This could be accomplished both by extending this measure into adulthood and/or applying adult personality structures (i.e., the Five Factor Model) to the study of children's self-concepts.

As a related goal, these results could help inform the development of a common language for discussing personality across the lifespan. Our results lend support for past research that has used the Big Five factors to characterize the personalities of adolescents and younger children (e.g., Digman, 1989, John et al., 1994, Measelle, John, Ablow, Cowan, & Cowan, 2005). Indeed, this study supports other recent work (Measelle et al., 2005) in suggesting that the Big Five personality dimensions are related to the content of children's responses to self-concept items. Likewise, these self-concept factors are roughly analogous to Tellegen's higher-order factors that have also been widely used in adult personality research. These findings may indicate some degree of content overlap between adult personality traits and the three dimensions of the CSVQ identified in this study. Given the difficulty of describing personality from childhood to adulthood (e.g., Shiner, Tellegen, & Masten, 2001), such common ground could prove to be valuable. It may be that children's self-reported personality is best discussed in terms of pre-existing personality constructs (i.e., the Big Five). Or, the new dimensions of children's self-

concepts reported here could be useful in constructing a much needed taxonomy of childhood personality (e.g., Shiner, 1998).

Future Directions in Self-Concept and Personality Development

Although mother-child agreement about children's personalities in and of itself may be an important result for adult and child personality researchers, perhaps it is even more important to know *why* this agreement exists. From a developmental perspective, the underlying reason behind this agreement is the most interesting issue at hand for future research. One possibility is that children and their mothers both give equally accurate (or inaccurate) reports of child behavior and emotions. It may be that these multiple informants give independent assessments that are similar, and each person's perception is largely unaffected by the other. However, a second possibility is that parents are particularly influential in children's self-concept formation in early childhood.

Indeed, a number of developmental researchers have argued that young children are likely to incorporate into their self-concepts the attributes that parents attribute to them (see Caspi, 1998; Miller & Mangelsdorf, 2005; Thompson, 1998). In this way, self-understanding is very much a social process that incorporates relational influences, such that "children perceive themselves through the lens of others' regard" (Thompson, 1998, p. 77). This seems particularly true when discussing the self-concept in emotional terms, although the current data can in no way speak to this potential process. Future research should attempt to uncover whether agreement between parents and children could be a result of a developmental process in which the self-concept is in part shaped by feedback from important social sources.

In addition, these social influences may work in combination with child characteristics. Based on early temperamental differences, children interact with their environment in very different ways. Thus, many researchers have argued that temperament becomes elaborated into child and adult personality structure (e.g., Shiner & Caspi, 2003). This concept is also consistent with theory outlined by Eder and Mangeldorf (1997), and Thompson (1998), in which the self-concept develops based on the interaction between the child's emotional characteristics and his or her social environment, particularly through the parent-child relationship.

Limitations and Future Research

This study has several limitations that must be addressed. Future research with the CSVQ should attempt to confirm the factor structure derived in this study to determine how well this new structure replicates in other samples (see Goodvin et al., under review for some preliminary success). The failure to replicate prior factor structures in the current study prompted the use of an exploratory technique. However, this raises the issue that confirmation of the new factor structure may also be difficult, especially given that an exploratory solution runs the risk of capitalizing on chance within a particular sample. CFA, preferably with larger sample sizes, may be especially useful for establishing a reliable, latent structure of children's self-concepts (see Marsh et al., 2004). This factor structure does seem more likely to replicate, given: 1) increased sample size, 2) increased internal reliability, and 3) more advanced statistical analysis relative to Eder's (1990) original work, as well as established associations with perceptions from another reporter. Nonetheless, future self-concept research using this

same instrument would do well to heed Marsh et al.'s (2004) advice by attempting to confirm and cross-validate the factor analytic results that emerged in this study.

Measurement selection was also lacking in some respects. It would be informative to examine mother-child agreement by having mothers and children complete identical measures. A full multitrait-multimethod analysis would be more appropriate for establishing self-other agreement between mothers and children. The exclusive use of non-parallel measures for mothers and children makes it difficult to reach strong conclusions regarding convergent and discriminant validity based on these data. Furthermore, the CSVQ represents one measure of children's self-concept, but other methods are available. Although there is no clear consensus, Davis-Kean and Sandler (2001) note that there are limitations to the use of both puppets and dichotomous response items, suggesting that other sorts of instruments may be equal or superior to this technique. It is therefore important to emphasize that the CSVQ is best considered as a complement to, rather than a replacement for, other self-concept measures. Future research should further compare individual instruments, and examine the ways in which they may best be used in conjunction with one another.

The concurrent and non-experimental nature of these data obviously does not allow us to establish any sort of causal link between maternal perceptions of children's personality and children's self-concepts. Furthermore, the limited focus on only mothers and children may not capture the full spectrum of a child's social experience. Future explorations could include child personality perceptions from other important social figures, including fathers, siblings, teachers, and peers. A longitudinal investigation

would allow us to examine the relative influence of these social figures across childhood, as the child's social environment continues to expand and diversify.

Clearly, more work is needed to disentangle the sources of children's emergent personality characteristics. It may be that a number of other factors, including infant-parent attachment (e.g., Cassidy, 1988; Verschueren et al., 1996), temperament (e.g., Eder & Mangelsdorf, 1997), gender (e.g., Ashmore, 1990), and culture (e.g., Markus & Kitayama, 1991) play a formative role in shaping the self-concept across childhood. The further examination of these influences will help to achieve a more complex and textured understanding of self-concept and personality development.

In summary, the findings of this investigation provide potentially valuable information regarding the nature of young children's self-concepts. These findings help to elaborate upon an essential, yet understudied, aspect of early emotional and personality development – the extent to which young children can reliably tell us about their own personalities. Furthermore, these results are suggestive of possible influences regarding self-concept formation in early childhood. Future investigations may not only help researchers to better understand the nature of children's self-concepts, but also aid in determining the role that these self-concepts play in social and emotional development in childhood and beyond.

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Table 1

Internal reliability based on results of non-linear factor analyses of CSVQ items

Self-Concept Dimension	*Cronbach's alpha*
CFA of Eder's (1990) higher-order dimensions	
Self-Control	.53
Self-Acceptance via Achievement	.13
Self-Acceptance via Affiliation	.43
CFA of Eder's (1990) lower-order dimensions	
Achievement	.38
Aggression	.57
Alienation	.46
Harm-Avoidance	.49
Social Closeness	.44
Social Potency	.20
Stress Reaction	.40
Traditionalism	.50
Well-Being	-.02
Factors resulting from EFA	
Timidity	.68
Agreeableness	.72
Negative Affect	.72

Table 2

Promax (Oblique) Rotated Factor Loadings of Children's Self-Concept Items

Timidity (8 items; α = .68)

I don't climb up on things that are high (.65).
It's not fun to scare people (.70).
I don't think that it would be fun to hang upside-down on a jungle-gym (.48).
I don't like to tease people (.50).
When I hear lightning and thunder, I would never run to look out the window (.55).
I don't like to watch other people fight (.65).
When I see something scary on TV, I cover my face (.50).
It's not fun riding in a fast car (.51).

Agreeableness (14 items; α = .72)

I like to do what my friends tell me to do (.46).
I care about doing a really good job on everything I do (.54).
I have a best friend (.45).
I usually do what Mommy or the teacher says (.45).
When new people come to my house, I show them my toys (.69).
I like to have people look at me (.81).
People want to be around me (.49).
I share toys with kids I don't know (.60).
I like to show things in "show and tell" at school (.52).
I am a good girl/boy (.48).
I try hard in school (.43).
People like me (.46).
I would play with a new kid in my school (.90).
I feel good inside (.41).

Negative Affect (9 items; α = .72)

I get scared a lot (.68).
I get mad a lot (.90).
Some days everything makes me grouchy (.63).
People always say mean things to me (.55).
A lot of things make me upset (.63).
I like to boss people around (.63).
I am grumpy a lot of the time (.55).
I get sad a lot (.71).
I cry when I get upset (.60).

Table 3

Associations Between Children's Self-Concepts and Mothers' Reports of Child Personality

	Children's Self-Concept Factor					
	Timidity		*Agreeableness*		*Negative Affect*	
Mothers' Reports of Child Personality	*r*	β	*r*	β	*r*	β
Extraversion	-.33***	-.25*	.05	.11	.01	.09
Agreeableness	.05	.05	.38***	.39***	-.15	-.05
Conscientiousness	.01	.04	.13	.06	-.26**	-.13
Neuroticism	.26**	.13	-.03	.10	.30***	.30***
Openness to Experience	-.26**	-.20*	-.02	-.01	-.01	.08

*$p < .05$. **$p < .01$. ***$p \leq .001$.

Note: *r* = bivariate correlation. *B* = standardized beta weight when all independent variables (maternal report of child personality) entered into the same block in a regression equation. Separate equations created for each dependent variable (self-concept factor).