

BRIEF REPORT

A Preliminary Validation of Preadolescents' Self-Reports Using the Five-Factor Model of Personality

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Although self-reports using the Five-Factor Model (FFM) of personality have been used in both adult and adolescent populations, few studies have investigated preadolescents' ability to rate themselves using measures of the FFM. A total of 130 preadolescents (mean age = 10.79 years) rated their personalities using the NEO Five-Factor Inventory (NEO-FFI). When standardized verbal prompts were used to clarify the vocabulary in the NEO-FFI, preadolescents were able to reliably rate themselves across all traits of the FFM. Preadolescents' self-ratings were found to moderately agree with mothers' ratings of their children's personalities, suggesting not only the potential utility of using other-reports of preadolescent personality but also the appropriateness of using self-reports. © 2002 Elsevier Science (USA)

Among personality psychologists, the Five-Factor Model (FFM) of personality has received widespread attention in contemporary theories and research addressing adult personality (Digman, 1990; Goldberg, 1990; McCrae & Costa, 1995). The traits of neuroticism, extraversion, openness, agreeableness, and conscientiousness have proven to be robust across different cultures (Church & Katigbak, 1989; Kallasmaa, Allik, Realo, & McCrae, 2000), genders (Costa & McCrae, 1992a), methods (McCrae, Costa, & Busch, 1986), and item pools (Costa & McCrae, 1988; Goldberg, 1990).

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Using these essential traits has allowed for an efficient, parsimonious, and arguably comprehensive means of evaluating personality among adults (for a critique of the FFM, see Block, 1995, 2001).

Preliminary examinations of the FFM among adolescents suggest the utility of this framework for discussing personality among younger populations as well. The five-factor structure of personality has been recovered from ratings by parents and teachers of adolescents (Mervielde, Buyst, & De Fruyt, 1995; Resing, Bleichrodt, & Dekker, 1999). These other-ratings have demonstrated that the broad traits encompassed in the FFM are useful predictors of important developmental outcomes, including adjustment, academic achievement, conduct disorders, risk behaviors, delinquency, and psychopathology (Ehrler, Evans, & McGhee, 1999; Graziano & Ward, 1992; John, Caspi, Robins, Moffitt, & Stouthamer-Loeber, 1994; Robins, John, & Caspi, 1994). In addition, De Fruyt and colleagues (De Fruyt, Mervielde, Hoekstra, and Rolland, 2000) suggested that standardized self-report measures of adult personality (e.g., Revised NEO Personality Inventory [NEO-PI-R]) can also be used to reliably assess the personality of adolescents. Factor analysis of adolescents' self-ratings have revealed a factor structure similar to adults' self-ratings of personality (Donahue, 1994; Scholte, van Aken, & van Lieshout, 1997; van Lieshout & Haselager, 1994). Examining the validity of such ratings in an even younger population, Parker and Stumpf (1998) reported that self-ratings of *gifted* youths (mean age = 12.00 years¹) using an adult personality measure (NEO Five-Factor Inventory [NEO-FFI]) were reliable and valid. However, it is still unknown whether younger non-gifted preadolescents are capable of completing self-reports of the FFM.

When measures of the FFM have been traditionally applied to preadolescents (under 12 years old), others' reports (e.g., those from a parent or teacher) have been used almost exclusively. While these reports have unquestionably helped to advance our understanding of preadolescents' personality and the relevance of the FFM to this age group, they have failed to acknowledge preadolescents' increasing awareness of their own personalities. Research suggests that preadolescents should have the cognitive capacity to evaluate not only their observable behaviors (e.g., Tinsley, Holtgrave, Erdley, & Reise, 1997) but also less visible and more abstract constructs such as personality traits. Children are believed to first become capable of understanding and describing themselves using trait labels and comparative terms during the transition to elementary school (Harter, 1998). It has been suggested that increasing exposure to diverse social situations throughout childhood (e.g., school [Rogoff, 1996]) and biologically based devel-

¹ In Parker and Stumpf (1998), this age was incorrectly reported as 13.77 years (McCrae et al., 2001).

opmental processes (e.g., frontal lobe development [Janowsky & Carper, 1996]) facilitate advanced cognitive skills such as self-representations and descriptive labeling (i.e., traits) of persons and objects. During the transition to adolescence, these skills become more advanced, resulting in youths' ability to use abstract reasoning skills and adopt a more complex understanding of themselves (Harter, 1998; Moretti & Wiebe, 1999). These cognitive advances should allow preadolescents to accurately report their own personalities using self-report measures.

While self-reports are susceptible to errors (e.g., self-enhancement, self-deception [John & Robins, 1993]), they can provide information sometimes not available from other-reports. In making judgments, individuals are able to use internal cues, such as physiological changes and cognitions, that are not accessible to outside observers. Individuals are also in the unique position of observing how they behave in different environments (e.g., home, school [Funder, 1999]). This is not to say that self-raters are unequivocally superior to other-raters; rather, a better understanding of the FFM may be obtained when both self- and other-ratings are employed. Assessing self-ratings of the FFM among preadolescents could also aid in the understanding of the origins and structure of these traits across the life course.

It is the aim of the current study to investigate nongifted preadolescents' ability to rate their own personalities using an adult inventory (NEO-FFI) of the FFM.² The reliability of these assessments is explored to determine whether items traditionally used to assess these traits in adults continue to remain coherent when youths use this measure. In addition, as a first step in determining the validity of these trait ratings among preadolescents, the convergence between their self-reports and their mothers' reports is examined.

METHOD

Participants

A total of 130 fifth-grade students ($M = 10.79$ years of age, range = 10.00–12.66) and their mothers participated in the current study. This preadolescent sample consisted of 73 males (56%) and 57 females (44%). Nearly half of the participants were Mexican American (44%), and the rest were Euro-American (56%). All preadolescents and their mothers were recruited through a local school district and represent a nonclinical population. These youths and their families are participants in a longitudinal study examining individual differences and sociocultural influences on preadolescents' health and development.

² While standardized self-report personality measures, such as Cattell's High School Personality Questionnaire (Cattell & Cattell, 1975) and the Junior Eysenck Personality Inventory (Eysenck, 1965), exist for this age group, these measures were not designed to assess the FFM.

Measures

Mothers. Mothers rated their children's personalities using either the Spanish or English version of the NEO-FFI (Form S). Written instructions were modified to indicate that they were to rate the extent to which each item may or may not apply to their children. The NEO-FFI is a short, 60-item, 5-point Likert scale questionnaire designed specifically to assess the traits of neuroticism, extraversion, openness, conscientiousness, and agreeableness (Costa & McCrae, 1992b).

Preadolescents. Preadolescents also rated themselves using either the Spanish or English version of the NEO-FFI (Form S). However, pilot testing of preadolescents revealed that the vocabulary used in the NEO-FFI tended to be too advanced for this age group. Subsequently, four individuals with extensive experience in interviewing and teaching preadolescent children developed standard verbal prompts for most items.³ For example, the verbal prompt "trick" was used to help clarify the meaning of the word "manipulate." These prompts were translated and back-translated to ensure their comparable meaning in Spanish and English (Marín & Marín, 1991). Pilot testing of these verbal prompts indicated that they provided a developmentally appropriate means of allowing preadolescents to understand the items of the NEO-FFI.

Procedures

Mothers and preadolescents completed the above questionnaires among other measures addressing a wide range of individual characteristics of children and their rearing environments. A majority of the mothers (82%) and children (80%) selected to complete the measures in English. Mothers either completed the NEO-FFI as part of a laboratory visit or at home. In both scenarios, mothers were given identical written instructions. All children were interviewed by trained research assistants either during a laboratory visit or over the telephone. To help preadolescents respond to the items on the NEO-FFI, each child was given a "response scale" that displayed the possible answers. Children were instructed to look at this response scale when answering the questions. After determining that the children understood these directions, interviewers read each NEO-FFI item along with the appropriate verbal prompt. All of the preadolescents' responses were then recorded by the interviewers.

RESULTS

In the following analyses, the results obtained using Spanish and English measures were virtually identical, and participants were combined for all results. To examine the internal reliability of the NEO-FFI, alphas were calculated separately for the preadolescents' self-reports and the mothers' reports of their children's personalities. Adequate reliability was found for the traits of neuroticism, extraversion, conscientiousness, and agreeableness for both mothers' reports (.83, .72, .90, and .77, respectively) and preadolescents' self-reports (.67, .51, .80, and .63, respectively). The trait of openness had the lowest reliability for both mothers (.53) and preadolescents (.16). Closer examination of the openness items revealed that items 8 and 38 were negatively correlated with the openness scale for mothers ($r = -.10$ and $r = -.07$, respectively) and preadolescents ($r = -.10$ and $r = -.24$ respec-

³ Specific instructions and prompts used in this study are available from the first author.

TABLE 1
Mean Differences between Preadolescents' Self-Ratings and Mothers' Ratings

Trait	Preadolescent	Mother	Mean difference
Neuroticism	21.49 (6.17)	20.13 (7.37)	1.36 [0.71]
Extraversion	31.45 (4.57)	30.99 (5.59)	0.46 [0.56]
Openness	22.07 (3.74)	21.64 (4.52)	0.43 [0.44]
Conscientiousness	31.05 (6.25)	27.42 (8.86)	3.63* [0.72]
Agreeableness	31.32 (5.46)	32.42 (6.53)	-1.10 [0.59]

Note. Values in parentheses are standard deviations. Numbers in brackets are standard errors of the differences between means. Neuroticism, extraversion, conscientiousness, and agreeableness scale scores range from 0 to 48. Because two items were removed, openness scale scores range from 0 to 40. $df = 129$.

* $p < .05$.

tively). After these items were removed, alphas for both mothers (.63) and preadolescents (.40) increased. For all subsequent analyses, this more reliable openness scale is employed.

Next, the mean differences between preadolescents' self-perceptions and their mothers' perceptions were examined using both paired t tests and Cohen's d . Table 1 presents means and standard deviations of the five NEO-FFI scales for both preadolescents' and mothers' ratings. Using Cohen and Cohen's (1983) definitions of the magnitude of effect sizes, the differences for the traits of neuroticism, $t(129) = 1.91$, $p = .06$, $d = .33$, extraversion, $t(129) = 0.80$, $p = .42$, $d = .14$, openness, $t(129) = 0.97$, $p = .33$, $d = .17$, and agreeableness, $t(130) = -1.87$, $p = .06$, $d = .32$, were small and nonsignificant. However, there was a strong and significant mean difference for the trait of conscientiousness, $t(129) = 5.06$, $p < .05$, $d = .89$, with preadolescents rating themselves higher on conscientiousness than their mothers did.

Finally, Pearson correlations were used to examine the amount of relative agreement between preadolescents' self-perceptions of their personalities and how they were judged by their mothers. Table 2 demonstrates significant child-mother agreement across all traits of the FFM. The traits of conscientiousness and agreeableness showed the highest levels of agreement, while neuroticism, openness, and extraversion produced slightly lower, yet still significant, levels of agreement. The average absolute value of the off-diagonal elements was $r = .14$, indicating adequate discriminant validity.

TABLE 2
Correlations between Preadolescents' Self-Ratings and Mothers' Ratings

Mothers	Preadolescents				
	1	2	3	4	5
1. Neuroticism	.30*	-.16	-.11	-.23*	-.37*
2. Extraversion	-.13	.23*	.16	.03	.15
3. Openness	-.06	.10	.26*	.02	.12
4. Conscientiousness	-.25*	-.03	-.03	.46*	.34*
5. Agreeableness	-.12	.09	.13	.14	.39*

Note. Bolded values indicate relative child-mother agreement. $df = 128$.

* $p < .05$.

Furthermore, analysis revealed that these nonzero off-diagonal values were largely a function of the intercorrelations among the five scales within mothers and preadolescents.⁴

DISCUSSION

Prior to this study, the youngest sample used to assess the reliability and validity of self-reports using a measure of the FFM consisted of *gifted* youths with an average age of 12.00 years (Parker & Stumpf, 1998). The current study investigated the extent to which a sample of *nongifted* children with an average age of 10.79 years could perceive and reliably rate elements of their personalities using an instrument designed to assess the FFM. In addition, the validity of these self-ratings was assessed by examining their agreement with mothers' perceptions of their children's personalities.

While it was found that preadolescents were not able to understand some of the vocabulary used in the NEO-FFI, this problem was easily overcome by creating standard prompts for difficult items. By using vocabulary familiar to this population, preadolescents were able to use the NEO-FFI to make reliable self-assessments of their neuroticism, extraversion, conscientiousness, and agreeableness. Only the trait of openness initially failed to have adequate reliability. On closer inspection of the openness items, it was found that two items—one concerned with "controversial speakers" and the other with "religious authorities"—were severely limiting this scale's reliability. When these items were removed, the reliability of the openness scale increased substantially. While these items are good indicators of an adult's

⁴ When these intercorrelations were partialled, the average absolute value of the off-diagonal elements reduced to $r = .05$. For example, the correlation between mothers' ratings of neuroticism and preadolescents' ratings of agreeableness ($r = -.37$) was reduced ($r = -.08$) when mothers' agreeableness score was partialled from mothers' neuroticism score and preadolescents' neuroticism score was partialled from preadolescents' agreeableness score.

openness, apparently they were not applicable to a child's openness. Similarly, research suggests that even adolescents ranging in age from 12 to 17 years have difficulty with NEO items assessing the trait of openness (De Fruyt et al., 2000).

To help examine the validity of preadolescents' ratings of their own personalities, the absolute agreement between these self-ratings and mothers' ratings was first evaluated. Only the trait of conscientiousness showed significant mean differences, with preadolescents rating themselves as more conscientious than their mothers rated them. More central to the issue of validity, child and mother perceptions were moderately correlated with each other across all five traits. This relative agreement indicates that children who rated themselves relatively high on a trait tended to receive relatively high ratings from their mothers, compared to children who rated themselves lower on the trait. Across the five traits, the average level of agreement in this study ($r = .33$) was only slightly lower than the amount of self-parent agreement found with gifted children ($r = .45$ [Parker & Stumpf, 1998]) and college students ($r = .43$ [Funder, Kolar, & Blackman, 1995]). The convergent validity of child-mother ratings indicates that preadolescents' self-reports of the FFM are not merely cognitive artifacts (Mischel, 1968) but likely have objective psychological reality (Funder, 1999). Interestingly, in the current study, child-mother relative agreement was greatest for conscientiousness. This may have occurred because issues concerning organization (e.g., cleaning up) and planfulness (e.g., getting schoolwork done) are extremely salient to preadolescents and mothers of preadolescents. Consistent with this notion, previous research has found that the trait of conscientiousness accounts for a substantial portion of the variance in teacher and parent reports of youths' personalities (Kohnstamm, Slotboom, & Elphick, 1994; Mervielde et al., 1995).

This study found that nongifted youths were able to rate themselves using the FFM at a much younger age than was known previously. This demonstrates that preadolescents not only have personalities, they also have the cognitive abilities necessary to have insight into these personalities. It appears that researchers who have opted to use only other-reports of youths' personalities may have underestimated preadolescents' ability to rate their own personalities. With "adult" personality research consistently showing the utility of the FFM, additional research investigating the appropriateness of this model to describe youths' personalities is needed. The development of personality clearly remains an understudied area. However, by using preadolescents' self-ratings on the FFM, it is hoped that researchers will be able to better examine the development and expression of these broad traits.

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