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# Children's Behavioral Manifestations of the Five-Factor Model of Personality

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*The present study examined relations between ratings of children's personalities using the Five-Factor Model (FFM) of personality and behaviors exhibited by children during an interaction with their parents. Ninety-four children (M age = 10.87 years) and their parents participated in a videotaped interaction; children were coded on 64 different social behaviors using a revised version of the Riverside Behavioral Q-Sort. Mothers completed ratings of their children's personalities using the NEO-Five-Factor Personality Inventory (NEO-FFI). Results indicate an intuitive and predictable pattern of relations between children's personalities and their behaviors. Findings suggest that four of the five factors included in the FFM provide an appropriate framework for describing children's personalities. These findings are discussed in terms of their relevance for helping researchers understand children's personalities.*

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**Keywords:** *Five-Factor Model; preadolescent; personality; behavior*

Recently, the first two authors of this article had some real life experience attempting to understand children's personalities. As volunteers at our niece's ninth birthday party, we watched 20 girls and boys participate in traditional birthday party activities such as "Simon Says" and "Pin the Tail on the Donkey." As a group, the children enthusiastically played, ate cake together, and cooperatively followed "Simon." However, we were stuck by the subtle (and sometimes not-so-subtle) individual differences among the children as they participated in these activities. There was a painfully shy girl, a boy who fearlessly dominated the other partygoers, and an exceptionally cheerful girl who seemed to be everyone's friend. By the time the children left (a long 3 hours later), we were in agreement—there were many different personalities

at the party. What we had a more difficult time agreeing on, based on these informal observations, was the means by which we had reached conclusions about different children's personalities. This led us to question, "How do children behaviorally manifest personality traits?"

Of course, to address this question, it is first necessary to take a step back and consider a more basic issue, "Do children actually have personalities?" Although any witness to a 9-year-old's birthday party would answer a resounding "Yes!" some psychologists (e.g., Lewis, 2001) have been less enthusiastic about concluding that children do in fact maintain stable individual differences. Until relatively recently, some even questioned the very existence and importance of consistent individual differences among adults (e.g., Mischel, 1968; see Kenrick & Funder, 1988, for a review of the person-situation debate). However, most contemporary researchers agree that children tend to be psychologically different from each other (Buss & Plomin, 1984; Diener, 2000; Roberts & Caspi, 2001; Shiner, 1998; Shiner & Caspi, 2003; Shiner, Tellegen, & Masten, 2001) and that these

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differences manifest themselves in relatively consistent patterns of behavior.

Developmental psychologists, for the most part, recognize individual differences among children. However, instead of examining personality traits (which tend to be the standard unit of analyses in adults) (e.g., Digman, 1990; Goldberg, 1993; McCrae & John, 1992), developmental psychologists typically refer to stable individual differences among children as evidence of temperament. Temperament is usually conceptualized as consisting of biologically based, emotional responses to environmental stimuli (Thomas & Chess, 1977). Parents and researchers alike recognize these differences in the first days after a child's birth; some infants are calm and complacent, whereas others are nearly impossible to appease.

Some researchers suggest (e.g., Rothbart & Ahadi, 1994) that temperaments become traits as developmental processes better equip children to express traits that are more differentiated than earlier temperamental qualities. This is to be expected given that children and adults tend to participate in different environments (e.g., school vs. work) that promote distinct age-appropriate behaviors. Therefore, although individuals maintain an enduring psychological core as they mature, the environment dictates how this core is behaviorally manifested. With development, children not only participate in different environments but also gain greater cognitive flexibility and access to a wide array of environmental contexts. This flexibility further allows individual characteristics to be manifested differentially with age. Caspi (1993; Caspi & Bem, 1990) and Scarr (1992) have both delineated person-environment interactions that may facilitate this process of personality differentiation. Their descriptions of possible processes, although possessing somewhat different labels (i.e., Caspi's *reactive*, *evocative*, and *proactive* interactions compared to Scarr's *passive*, *evocative*, and *active*), are actually very similar, with both highlighting the importance of conceptualizing personality development as a bidirectional relation between the environment and the individual. Without question, these person-environment interactions are not only intuitive explanations for personality development, they have received considerable empirical support (Caspi, 1993; Caspi & Bem, 1990; Caspi & Roberts, 1999).

With researchers delineating how individual differences may "look" different with age, it seems clear that temperaments and traits are not necessarily distinct constructs; they are age-specific manifestations of virtually the same latent qualities (McCrae et al., 2000; Shiner & Caspi, 2003). Of interest, these age-specific manifestations have rarely been documented. There is accumulating research examining the behavioral manifestations of

traits in adults (e.g., Colvin & Funder, 1991; Funder & Sneed, 1993; Gifford, 1991), but considerably less information exists regarding behavioral manifestations of children's personalities. (For examples of research that does examine relations between youths' personalities and behaviors, the reader is referred to Bem & Funder, 1978; Funder & Block, 1989; Mischel, Shoda, & Rodriguez, 1992; Shedler & Block, 1990.) Furthermore, historically, most studies have examined children's personalities using diverse frameworks. Without consensus regarding the structure of children's personality, comparisons across studies have not always been possible.

Personality psychologists have recently begun to describe youths' (i.e., middle childhood through adolescence) personalities using the framework provided by the Five-Factor Model of Personality (FFM). In this model, neuroticism is characterized by individuals' susceptibility to worry, anxiety, depression, and general emotional instability; extraversion encompasses traits such as sociability, dominance, and talkativeness; openness to experience is characterized by curiosity, imaginativeness, and originality; agreeableness encompasses traits including friendliness, warmth, and cooperativeness; and conscientiousness includes qualities such as organizational skills, carefulness, and reliability. The FFM has traditionally been used in research assessing the personalities of adults (Digman, 1990; Goldberg, 1990; McCrae & Costa, 1995) and has proven robust across cultures (Church & Katigbak, 1989; Kallasmaa, Allik, Realo, & McCrae, 2000), gender (Costa & McCrae, 1992a), methods (McCrae, Costa, & Busch, 1986), and item pools (Costa & McCrae, 1988; Goldberg, 1990). It has been argued that these five traits permit an efficient, comprehensive, and parsimonious means of describing personality.

This is not to say that the FFM is without critics. Block (1995, 2001) has argued that the FFM is based on empirically driven work with post hoc (if any) theorizing to substantiate this model and questions whether five personality traits are the appropriate number to efficiently describe personality. In spite of the fact that the FFM may not be universally accepted as the perfect scheme for describing personality, most researchers agree that it provides one of the most established and useful frameworks currently available (Ozer & Reise, 1994). Advocates remind us that research continues to support the framework provided by the FFM and that a superior alternative has yet to emerge for describing youths' or adults' personalities (Costa & McCrae, 1995; Goldberg & Sautier, 1995; McCrae, 2001).

Research addressing the utility of the FFM for describing youths' personalities has begun to accumulate in the past decade. The Five-Factor structure of personality has

been recovered from ratings by parents and teachers of adolescents (Goldberg, 2001; Mervielde, Buyst, & De Fruyt, 1995; Resing, Bleichrodt, & Dekker, 1999). Adolescents' self-ratings have also been factor analyzed, revealing a factor structure similar to adults' self-ratings of personality (Donahue, 1994; Scholte, van Aken, & van Lieshout, 1997; van Lieshout & Haselager, 1994). Furthermore, P. M. Markey, Markey, Ericksen, and Tinsley (2002) have found that preadolescent children are able to reliably rate themselves using a standard measure of adult personality (NEO-Five-Factor Personality Inventory [NEO-FFI]) and that parents' ratings of their children's personalities are related to these self-reports.

Although the FFM is steadily becoming an accepted model of personality in youths, there is still little evidence relating it to observed behavior. Most previous studies examining the FFM in this age group have tended to rely on self-reports or parent-reports of behavior. In this type of research, children or parents will typically complete a measure of the FFM describing their children and then either the child, parent, or a teacher will describe the types of behaviors the child tends to exhibit (e.g., Jensen-Campbell et al., 2002; Lamb, Chuang, Wessels, Broberg, & Hwang, 2002; C. N. Markey, Ericksen, Markey, & Tinsley, 2001; C. N. Markey, Markey, & Tinsley, 2003; Scholte et al., 1997). These self- and 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, peer relations, risk behaviors, delinquency, and psychopathology (Ehrler, Evans, & McGhee, 1999; Graziano & Ward, 1992; Gullone & Moore, 2000; Jensen-Campbell et al., 2002; C. N. Markey et al., 2001; C. N., Markey, Markey, & Tinsley, 2002). These findings also have provided psychologists with rich insight into the developmental applicability of the FFM; however, this research is methodologically limited. Questionnaire studies using self- and well-acquainted raters are susceptible to idiosyncratic and systematic errors including enhancement, deception, and halo effects (Kenny, 1994). It is also difficult to determine if relations found by such research reflect a true substantive relation or if these results reflect method variance or item overlap (Funder, 2001). Most important, self- and other-report data are limited because, in the end, researchers are not interested in merely predicting a response on a questionnaire but are interested in understanding what children actually do.

There have been some attempts to link the FFM to more objective criteria, including school performance, official records of criminal behavior, and even longevity (Friedman et al., 1995; John, Caspi, Robins, Moffitt, & Stouthamer-Loeber, 1994; Krueger et al., 1994). How-

ever, pragmatic constraints involved in collecting such data have made this type of research relatively rare. Furthermore, research using these methods has tended to relate the FFM to a limited number of behaviors or life outcomes. By examining only a select number of behaviors, it is difficult for any single study to detect any meaningful pattern of behaviors. This is unfortunate because a personality trait, by definition, creates a relatively consistent *pattern* of behaviors.

#### AIMS OF THE PRESENT STUDY

The current study will build on previous research by examining the link between the FFM and a large set of diverse behaviors exhibited by children. Judges will rate a broad range of youths' observed behaviors from videotaped interactions with their parents. The relations between children's personality traits and their behaviors during the interactions with their parents will then be examined. A separate group of judges will rate each of these behaviors in terms of how diagnostic they are of the FFM traits. It is hypothesized that youths' behaviors will be related to neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness in an intuitive manner consistent with judges' diagnosticity ratings. Such findings have the potential to not only provide insight into how children behaviorally manifest the FFM but to also demonstrate the validity of the FFM when applied to this age group.

#### METHOD

##### *Participants*

Ninety-four children ( $M = 10.07$  years,  $SD = .51$ ) and their parents participated in the current study. Approximately half of the sample of children was male (40 boys, 43%) and half was female (54 girls, 57%). Both mothers and fathers were asked to participate in this study with their child and at least one parent was required to complete the study. In 51 (54%) families, both parents completed the study, and in 43 (46%) families, only the mother participated. Participants in the current sample were either of Euro-American (72%) or Mexican American ethnicity (28%). All participants were recruited through the school district of a mid-sized city on the U.S. west coast (a total of 13 schools, with an average response rate of 35%) and represent a sample of economically and ethnically diverse youths representative of the population in this geographic region. All participants were required to be in good health, not suffering from any chronic health conditions or learning disabilities, and had to be cognitively functioning at their approximate grade level. These youths and their families are participants in a longitudinal study examining individual

differences and sociocultural influences on youths' healthy development.

### Measures

*Five-Factor Model of personality.* Mothers were instructed to rate their child's personality using the NEO-FFI. The NEO-FFI is a short, 60-item questionnaire designed specifically to assess the traits of neuroticism, extraversion, openness, conscientiousness, and agreeableness (Costa & McCrae, 1992b). Written instructions were modified to indicate that mothers were to rate the extent to which each item may or may not apply to their child (see Markey et al., 2002, for additional information about this assessment).

### Behavioral Observations

*Family interactions.* Children and their parent(s) participated in an interaction task during a laboratory visit. Instructions were supplied to families indicating that they should cooperatively create a "health graph" with the supplies provided (pens, paper, ruler, etc.) that documented some of the life experiences of the child participating in the project. An example of an imaginary child's graph was provided to prompt conversation and to facilitate completion of this task. Families were encouraged to work together to document important experiences in the child's life (e.g., birth, beginning to walk, starting school, coping with chicken pox). This fairly open-ended task was designed to allow flexibility in the participants' interactions and proved to evoke widely varied behaviors from children, mothers, and fathers.

*Coding behaviors.* The Riverside Behavioral Q-Sort (RBQ) (Funder, Furr, & Colvin, 2000) was used to code the behaviors of the children participating in this study. The 64-item RBQ provides ratings of a wide range of behaviors and is intended for use when coding behaviors during interpersonal interactions. The RBQ consists of items designed to measure behaviors at a level of generality between narrowly defined motor activities and more abstract styles of behavior (e.g., "offers advice," "expresses agreement frequently"). Each item is placed on a card and judges describe the behavior of a target by ordering the cards into a forced choice, quasi-normal distribution. Each card is placed in one of nine categories indicating the degree to which the item is characteristic of the participant's behavior. Cards placed in Category 1 indicate behaviors that are extremely uncharacteristic of the participant, those placed in Category 5 are behaviors that are neither characteristic nor uncharacteristic of the participant, and behaviors placed in Category 9 indicate those behaviors that are extremely characteristic of the participant. Because the RBQ was created for coding the behaviors of adults as they interact with unrelated partners, the wording of several items

was adjusted for use with the current sample. The RBQ items were revised to indicate that the individual(s) the children interacted with were "parent(s)" instead of "partner(s)" (e.g., "interviews his or her *partner*" was changed to "interviews his or her *parent(s)*"). Furthermore, the item "expresses sexual interest" was not relevant to this interaction and was revised to read "expresses affection (e.g., hugs, kisses, etc.)." A personality psychologist and a developmental psychologist both rated the behaviors of all of the children after viewing the first 5 min of the taped family interactions. The average interrater reliability of the RBQ items was .55.

*Predicted relations between the RBQ and the FFM.* Research by Eaton and Funder (2000) supplies information about which behaviors individuals tend to conceptualize as being related to the traits within the FFM. This previous study provided six judges with descriptions of each of the five factors and asked them to use the RBQ five separate times to Q-sort the behaviors they predicted a prototypical individual might perform (e.g., the prototypical neurotic person). Judges Q-sorted the behaviors of prototypical individuals for all five traits (average interjudge reliability = .93). Eaton and Funder's results provide information about the predicted relations between each of the five factors and the 64 behaviors measured by the RBQ. To ease interpretations, the current study standardized ( $M = 0$ ,  $SD = 1$ ) these predictions within each trait. Therefore, a negative prediction score signifies that judges predicted this behavior would be uncharacteristic of an individual judged high on the trait being rated and a positive score indicates the behavior was predicted to be extremely characteristic of a person judged high on the trait.

## RESULTS

Relations between youths' behaviors and each of the FFM personality traits were examined. Mothers' reports of their children's personalities were correlated with each of the 64 behaviors.<sup>1</sup> Tables 1 through 5 display the behaviors that had an effect size greater than or equal to .15. Results regarding neuroticism are in Table 1, extraversion are in Table 2, openness to experience are in Table 3, agreeableness are in Table 4, and conscientiousness are in Table 5. Each of these tables also displays the behavior's predicted relation with the corresponding trait as calculated from judges' ratings of a hypothetical individual.

As shown in these tables, behaviors were related to the traits of neuroticism, extraversion, agreeableness, and conscientiousness in a fairly intuitive manner. Children rated as neurotic tended to be self-critical, expressed guilt, manifested self-pity, were insecure, and even showed physical signs of tension. Extraverted children

**TABLE 1: Correlations Between Children’s Neuroticism Ratings With the Ratings of Their Behaviors and the Predicted Relations of the Behaviors With Neuroticism**

Item	r	Predicted Relation
<i>15 highest positively correlated behaviors</i>		
45. Says negative things about self (is self-critical, expresses feelings of inadequacy)	.36*	1.67
48. Expresses self-pity or feelings of victimization	.26*	1.86
40. Expresses guilt (about anything)	.25*	1.67
41. Keeps parent(s) at a distance, avoids the development of rapport during interaction	.24*	.46
34. Tries to undermine, sabotage, or obstruct (either the experiment or parents)	.23*	.65
32. Acts irritated	.22*	1.39
61. Seems detached from the interaction	.21*	.38
58. Speaks sarcastically (e.g., says things (s)he obviously does not mean, makes facetious comments that are not necessarily funny)	.19	.74
23. Shows physical signs of tension or anxiety (e.g., fidgets nervously, voice wavers)	.17	2.03
39. Expresses interest in fantasy or daydreams	.17	-.27
22. Expresses insecurity (e.g., seems touchy or overly sensitive)	.17	2.04
47. Blames others (for anything)	.16	1.02
20. Expresses criticism (of anybody or anything)	.16	1.02
28. Exhibits condescending behavior (acts as if self is superior to others)	.16	.38
36. Is unusual or unconventional in appearance	.15	.28
<i>15 lowest negatively correlated behaviors</i>		
2. Interviews his or her parent(s) (e.g., asks a series of questions)	-.25*	-.18
11. Smiles frequently	-.21*	-1.48
50. Behaves in a cheerful manner	-.21*	-1.95
30. Seeks advice from parent(s)	-.21*	.46
16. Shows high enthusiasm and high energy level	-.20*	-1.02
53. Offers advice	-.20*	-.46
4. Seems interested in what the parent(s) has to say	-.20*	-.65
52. Behaves in a stereotypically masculine/feminine style or manner	-.19	-.18
10. Laughs frequently	-.19	-.37
38. Is expressive in face, voice, or gestures	-.18	-.18
43. Seems to enjoy the interaction	-.17	-1.21
62. Speaks quickly	-.17	.18
5. Tries to control the interaction	-.16	.37
6. Dominates the interaction	-.16	.18
21. Is talkative (as observed in this situation)	-.15	-.18

NOTE: *df* = 92.  
\**p* < .05, two-tailed.

were dominant and controlling; they offered advice, interviewed their parents, and talked about themselves. Children who were rated as agreeable expressed and sought agreement from their parents, engaged in eye contact and physical contact (e.g., hugging, kissing,

**TABLE 2: Correlations Between Children’s Extraversion Ratings With the Ratings of Their Behaviors and the Predicted Relations of the Behaviors With Extraversion**

Item	r	Predicted Relation
<i>12 highest positively correlated behaviors</i>		
2. Interviews his or her parent(s) (e.g., asks a series of questions)	.30*	.56
53. Offers advice	.27*	.19
4. Seems interested in what the parent(s) has to say	.26*	.28
30. Seeks advice from parent(s)	.25*	-.81
5. Tries to control the interaction	.24*	.92
52. Behaves in a stereotypically masculine/feminine style or manner	.22*	-.09
6. Dominates the interaction	.21*	1.01
43. Seems to enjoy the interaction	.19	.56
13. Seems to like parent(s)	.16	.19
21. Is talkative (as observed in this situation)	.15	2.11
3. Volunteers a large amount of information about self	.15	1.11
16. Shows high enthusiasm and high energy level	.15	1.93
<i>11 lowest negatively correlated behaviors</i>		
36. Is unusual or unconventional in appearance	-.28*	-.82
34. Tries to undermine, sabotage, or obstruct (either the experiment or parents)	-.26*	-.64
41. Keeps parent(s) at a distance, avoids the development of rapport during interaction	-.25*	-1.64
61. Seems detached from the interaction	-.24*	-2.10
39. Expresses interest in fantasy or daydreams	-.23*	-.91
40. Expresses guilt (about anything)	-.22*	-1.09
45. Says negative things about self (is self-critical, expresses feelings of inadequacy)	-.21*	-1.00
20. Expresses criticism (of anybody or anything)	-.19	-.54
25. Expresses sympathy toward parent(s)	-.19	-.64
32. Acts irritated	-.19	-.73
18. Talks at rather than with parent(s) (e.g., conducts a monologue, ignores what parent(s) says)	-.16	.28

NOTE: *df* = 92.  
\**p* < .05, two-tailed.

etc.), and seemed to like their parents. Conscientious children were warm and sympathetic toward their parents and exhibited social skills, intelligence, and ambition. Of interest, the pattern of behaviors related to openness did not seem to occur in an intuitive manner. Children rated high on openness to experience tended to behave in a stereotypical masculine or feminine manner while seeking reassurance from their parents and, counter to the predictions, were unlikely to show a wide range of interests or interest in intellectual matters.

A comprehensive way to examine the predictability of the behavioral patterns of each trait discussed above is to correlate the predicted relation of a behavior and the Pearson *r* value indicating how that behavior was actually related to the corresponding trait (Rosenthal, Rosnow, & Rubin, 2000; Westen & Rosenthal, 2003). Conceptu-

**TABLE 3: Correlations Between Children's Openness to Experience Ratings With the Ratings of Their Behaviors and the Predicted Relations of the Behaviors With Openness to Experience**

Item	r	Predicted Relation
<i>3 highest positively correlated behaviors</i>		
52. Behaves in a stereotypically masculine/feminine style or manner	.24*	-.18
27. Seeks reassurance from parent(s) (asks for agreement, fishes for praise)	.16	1.02
31. Appears to regard self as physically attractive (nonverbal cues will probably be used to judge this item, examples might include preening, posing, etc.)	.15	-.56
<i>5 lowest negatively correlated behaviors</i>		
55. Emphasizes accomplishments of self or family	-.23*	-.19
17. Shows a wide range of interests (e.g., talk about many topics)	-.22*	2.31
42. Shows interest in intellectual or cognitive matters (by discussing an intellectual idea in detail or with enthusiasm)	-.20*	2.12
58. Speaks sarcastically (e.g., says things (s)he obviously does not mean, makes facetious comments that are not necessarily funny)	-.18	-1.25
24. Exhibits a high degree of intelligence	-.15	1.45

NOTE:  $df = 92$ .\* $p < .05$ , two-tailed.

ally, this is equivalent to correlating the "predicted relation" column in each table with the "r" column across the 63<sup>2</sup> behavioral items (i.e., not just the ones displayed in the tables). Using this procedure, high positive correlations indicate a close correspondence between the behaviors judges predicted would be related to a particular trait and how the behaviors were actually related to that trait. As indicated in Table 6, high positive correlations were found for neuroticism, extraversion, agreeableness, and conscientiousness. Only for the trait of openness to experience was there little relation between the predicted and actual behavioral patterns.

## DISCUSSION

Psychologists have begun to recognize that youths' personalities have long been neglected by developmental and personality researchers alike (Diener, 2000). The present study sought to investigate the relations between children's personalities, as assessed using the FFM, and their behaviors during a videotaped interaction. In doing so, this study provides a better understanding of how children's personalities are manifested and how appropriate the framework of the FFM is for describing youths' personalities.

**TABLE 4: Correlations Between Children's Agreeableness Ratings With the Ratings of Their Behaviors and the Predicted Relations of the Behaviors With Agreeableness**

Item	r	Predicted Relation
<i>14 highest positively correlated behaviors</i>		
19. Expresses agreement frequently	.29*	1.97
4. Seems interested in what the parent(s) has to say	.28*	1.34
27. Seeks reassurance from parent(s) (asks for agreement, fishes for praise)	.27*	.18
60. Engages in constant eye contact with parent(s)	.22*	1.07
13. Seems to like parent(s)	.22*	1.07
33. Expresses warmth (to anyone, e.g., include any reference to "my close friend," etc.)	.21*	1.78
29. Seems likeable	.20*	2.05
11. Smiles frequently	.20*	1.61
10. Laughs frequently	.19	.98
50. Behaves in a cheerful manner	.18	1.52
30. Seeks advice from parent(s)	.18	.36
49. Initiates physical affection (e.g., hugs, kisses, etc.)	.17	— <sup>a</sup>
2. Interviews his or her parent(s) (e.g., asks a series of questions)	.17	.36
59. Makes or approaches physical contact with parent(s) (of any sort, including sitting unusually close)	.15	.63
<i>14 lowest negatively correlated behaviors</i>		
28. Exhibits condescending behavior (acts as if self is superior to others)	-.25*	-1.52
56. Competes with parent(s)	-.24*	-1.43
20. Expresses criticism (of anybody or anything)	-.24*	-1.70
18. Talks at rather than with parent(s) (e.g., conducts a monologue, ignores what parent(s) says)	-.23*	-1.29
44. Says or does interesting things in this interaction	-.23*	.36
41. Keeps parent(s) at a distance, avoids the development of rapport during interaction	-.21*	-1.43
36. Is unusual or unconventional in appearance	-.20*	-.71
45. Says negative things about self (is self-critical, expresses feelings of inadequacy)	-.19	-.54
47. Blames others (for anything)	-.19	-1.34
58. Speaks sarcastically (e.g., says things (s)he obviously does not mean, makes facetious comments that are not necessarily funny)	-.19	-1.43
34. Tries to undermine, sabotage, or obstruct (either the experiment or parents)	-.18	-1.52
35. Expresses hostility (no matter to whom or what)	-.17	-1.78
32. Acts irritated	-.15	-1.70
46. Displays ambition (e.g., passionate discussion of future occupation, grades, etc.)	-.15	.00

NOTE:  $df = 92$ .

a. Because this item was revised from "expresses sexual interest" to "expresses affection (e.g., hugs, kisses, etc.)" for the current study, judges' predictions from Eaton and Funder (2000) were not available for this item.

\* $p < .05$ , two-tailed.

**TABLE 5: Correlations Between Children’s Conscientiousness Ratings With the Ratings of Their Behaviors and the Predicted Relations of the Behaviors With Conscientiousness**

Item	Predicted Relation	
	r	
<i>13 highest positively correlated behaviors</i>		
8. Exhibits social skills (e.g., does things to make the parent(s) comfortable, keeps the conversation moving)	.25*	.82
33. Expresses warmth (to anyone, e.g., include any reference to “my close friend,” etc.)	.22*	.31
50. Behaves in a cheerful manner	.22*	.31
24. Exhibits a high degree of intelligence	.21*	1.74
11. Smiles frequently	.21*	.41
29. Seems likeable	.20*	1.33
53. Offers advice	.20*	.51
25. Expresses sympathy toward parent(s)	.19	.20
2. Interviews his or her parent(s) (e.g., asks a series of questions)	.18	1.13
60. Engages in constant eye contact with parent(s)	.18	.41
10. Laughs frequently	.17	-.31
30. Seeks advice from parent(s)	.17	-.41
46. Displays ambition	.16	2.36
38. Is expressive in face, voice, or gestures	.16	.41
17. Shows a wide range of interests (e.g., talk about many topics)	.16	1.23
63. Acts playful	.16	-.51
54. Speaks fluently and expresses ideas well	.15	1.43
<i>15 lowest negatively correlated behaviors</i>		
34. Tries to undermine, sabotage, or obstruct (either the experiment or parents)	-.28*	-1.54
48. Expresses self-pity or feelings of victimization	-.27*	-1.74
45. Says negative things about self (is self-critical, expresses feelings of inadequacy)	-.27*	-1.13
47. Blames others (for anything)	-.25*	-1.54
58. Speaks sarcastically (e.g., says things (s)he obviously does not mean, makes facetious comments that are not necessarily funny)	-.25*	-.92
35. Expresses hostility (no matter to whom or what)	-.24*	-1.43
28. Exhibits condescending behavior (acts as if self is superior to others; low placement implies acting inferior to others)	-.22*	-.41
39. Expresses interest in fantasy or daydreams	-.21*	-1.23
41. Keeps parent(s) at a distance, avoids the development of rapport during interaction	-.21*	-.82
14. Exhibits an awkward interpersonal style (e.g., seems to have difficulty knowing what to say, mumbles, fails to respond to parents’ conversational advances)	-.20*	-1.43
20. Expresses criticism (of anybody or anything)	-.20*	-.41
18. Talks at rather than with parent(s) (e.g., conducts a monologue, ignores what parent(s) says)	-.19	-.92
44. Says or does interesting things in this interaction	-.19	.31
56. Competes with parent(s) (low placement implies cooperation)	-.18	.31
32. Acts irritated	-.17	-.72

NOTE: *df* = 92.  
\**p* < .05, two-tailed.

**TABLE 6: Correlations Between Each Behaviors Predicted Relation to a Trait and Each Behaviors Observed Relation to That Trait**

Trait	r
Neuroticism	.65
Extraversion	.63
Openness	-.03
Agreeableness	.75
Conscientiousness	.60

NOTE: *N* = 63 (the number of behavioral items).

The results presented in this article suggest that the traits of the FFM are useful for predicting children’s interpersonal behaviors. These constructs are extremely broad; in psychometric terms, they exemplify extreme bandwidth and low fidelity. Therefore, it would be expected that measures of the FFM would predict many diverse behaviors (bandwidth) but would not predict any single behavior especially well (fidelity). Consistent with this notion, most of the effect sizes in this study relating a single behavior to these constructs tended to be small or moderate (see Tables 1-5). However, as shown in Table 6, the overall pattern of behavior children exhibited was strongly related to four of the five traits included in the FFM.

Findings from this study suggest that within as little as 5 min, children’s personalities are manifested in a predictable pattern that is consistent with the FFM. Children who are neurotic display behaviors similar to adult neurotics, including negativity, irritability, and insecurity; they are unlikely to be happy and cheerful. Children who are extraverted resemble adult extraverts in their talkativeness and dominance; they are unlikely to be unengaged interaction partners. Children who are agreeable behave in a manner similar to agreeable adults; they are warm, likable, and interested in their parents and are unlikely to be competitive, negative, or critical. Children who are conscientious behave like conscientious adults; they seek and provide advice and exhibit social skills, intelligence, and ambition.

The intuitive relations found between preadolescents’ personality ratings and their behaviors indicate that it is possible to use the FFM to investigate and describe youths’ personalities. With the exception of the trait of openness, all of the traits included in the FFM were systematically related to children’s behavioral manifestations while interacting with their parents. This helps validate research examining children’s personality using the FFM and also supports recent attempts to delineate a taxonomy of four higher-order traits (extraversion, neuroticism, conscientiousness, and

agreeableness) that may appropriately describe personality at all stages of development (see Shiner, 1998; Shiner & Caspi, 2003). It is probable that openness, at least as it is measured in the current personality assessment, is not relevant for understanding children's personalities. Researchers may be wise to focus on the other four traits included in the FFM or to reconceptualize what openness would look like in children and revise personality assessments accordingly.

It is also possible that openness to experience is not a fundamental component of youths' personality structure and only becomes relevant when cognitive and social development allows children to become more complex individuals. Conceptualizing youths' personalities in terms of the remaining four factors is consistent with recent theorizing (e.g., Shiner, 1998) and Buss and Plomin's (1975, 1984) original notion of four main temperamental qualities: emotionality, activity, sociability, and impulsivity. These temperamental qualities may be comparable to (or emerge into) four of the five factors included in the FFM. Emotionality clearly resembles neuroticism as Buss and Plomin describe it in terms of negative emotionality. Activity is comparable to extraversion in many ways; both traits are believed to be characterized by energy and dominance. Impulsivity and conscientiousness are comparable, if not descriptions of opposite ends of a continuum. Finally, sociability may be conceptualized as similar to agreeableness; both the sociable infant and the agreeable adult are well liked and enjoy the company of others (Buss & Plomin, 1975). Thus, the findings from the present study may not only show how children behaviorally manifest the FFM but they help bridge the gap between developmental psychologists' notions of temperaments and personality psychologists' conception of traits.

A greater understanding of youths' personalities may prove extremely valuable. Considerable data are available to substantiate that personality measured in childhood and adolescence is associated with concurrent and longitudinal outcomes ranging from academic achievement to longevity (e.g., Caspi et al., 1997; Friedman et al., 1995; Jensen-Campbell et al., 2002; John et al., 1994; C. N. Markey et al., 2001; Shiner, Masten, & Roberts, in press). Although the current report cannot claim to explicate the mechanisms underlying these relations, these results move the field a step closer toward recognizing and understanding children's personalities.

Although the findings from this study provide potentially valuable information about the behavioral manifestations of children's personalities, the knowledge obtained from this study should be tempered with an understanding of its limitations. The interaction task used in this study permitted a wide variety of behavioral responses; however, the fact that preadolescents were

interacting with their parents may somewhat limit the generalization of the findings presented in this study. It seems reasonable that different types of interactions might alter the predictability of children's behavior. Snyder and Ickes (1985) have suggested that relatively unstructured situations (i.e., weak situations) allow individuals the opportunity to express their personality dispositions more readily than situations that have rigid norms or rules governing individuals' behaviors (i.e., strong situations). For example, situations characterized by defined roles (e.g., a teacher interacting with a child) would likely weaken the ability of the FFM to predict patterns of behavior. Future research could examine such moderating influences on the predictability of the FFM by examining children's interpersonal behavior in more diverse contexts.

In our nonacademic worlds, we have little trouble classifying children as fussy (i.e., neurotic), outgoing (i.e., extraverted), friendly (i.e., agreeable), or diligent (i.e., conscientious). As noted above, observations at a child's birthday party remind us that we depend on such personality judgments to help us determine how we should interact with a child. Psychologists and laypersons alike seem to understand that a fussy child will probably respond with whining or tears if they receive an undesirable gift; this behavior follows our preconceived notions of what types of behaviors different kinds of children are likely to exhibit. The current study not only demonstrates the validity of using the traits of neuroticism, extraversion, agreeableness, and conscientiousness to describe children's personalities but it also provides empirical evidence demonstrating that our preconceived notions about the relations between youths' personalities and behaviors tend to be correct.

#### NOTES

1. In the following analyses, the results obtained were similar regardless of with whom the child interacted (both parents or only the mother); thus, all participants are included together in the reported results.

2. Because Item 43 was revised from "expresses sexual interest" to "expresses affection (e.g., hugs, kisses, etc.)" for the current study, judges' predictions from Eaton and Funder (2000) were not available for this item.

#### REFERENCES

- Bem, D., & Funder, D. C. (1978). Predicting more of the people more of the time: Assessing the personality of situations. *Psychological Review*, 85(6), 485-501.
- Block, J. (1995). A contrarian view of the five-factor approach to personality description. *Psychological Bulletin*, 117(2), 187-215.
- Block, J. (2001). Millennial contrarianism: The five-factor approach to personality description 5 years later. *Journal of Research in Personality*, 35(1), 98-107.
- Buss, A. H., & Plomin, R. (1975). *A temperament theory of personality development*. New York: John Wiley.
- Buss, A. H., & Plomin, R. (1984). *Temperament: Early developing personality traits*. Hillsdale, NJ: Lawrence Erlbaum.

- Caspi, A. (1993). Why maladaptive behaviors persist: Sources of continuity and change across the life course. In D. C. Funder, R. D. Parke, C. A. Tomlinson-Keasey, & K. Widaman (Eds.), *Studying lives through time: Personality and development* (pp. 343-376). Washington, DC: American Psychological Association.
- Caspi, A., Begg, D., Dickson, N., Harrington, H., Langley, J., Moffitt, T. E., et al. (1997). Personality differences predict health-risk behaviors in young adulthood: Evidence from a longitudinal study. *Journal of Personality and Social Psychology*, 73(5), 1052-1063.
- Caspi, A., & Bem, D. J. (1990). Personality continuity and change across the life course. In L. A. Pervin (Ed.), *Handbook of personality: Theory and research*. New York: Guilford.
- Caspi, A., & Roberts, B. W. (1999). Personality continuity and change across the life course. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed.). New York: Guilford.
- Church, A. T., & Katigbak, M. S. (1989). Internal, external, and self-report structure of personality in a non-Western culture: An investigation of cross-language and cross-cultural generalizability. *Journal of Personality and Social Psychology*, 57(5), 857-872.
- Colvin, C. R., & Funder, D. C. (1991). Predicting personality and behavior: A boundary on the acquaintanceship effect. *Journal of Personality and Social Psychology*, 60(6), 884-894.
- Costa, P. T., & McCrae, R. R. (1988). From catalog to classification: Murray's needs and the Five-Factor Model. *Journal of Personality and Social Psychology*, 55(2), 258-265.
- Costa, P. T., & McCrae, R. R. (1992a). Four ways five factors are basic. *Personality and Individual Differences*, 13(6), 653-665.
- Costa, P. T., & McCrae, R. R. (1992b). *Revised NEO Personality Inventory and NEO Five-Factor Inventory: Professional manual*. Odessa, FL: Psychological Assessment Resources, Inc.
- Costa, P. T., & McCrae, R. R. (1995). Solid ground in the wetlands of personality: A reply to Block. *Psychological Bulletin*, 117(2), 216-220.
- Diener, E. (2000). Introduction to the special section on personality development. *Journal of Personality and Social Psychology*, 78(1), 120-121.
- Digman, J. M. (1990). Personality structure: Emergence of the Five-Factor Model. *Annual Review of Psychology*, 41, 417-440.
- Donahue, E. M. (1994). Do children use the Big Five, too? Content and structural form in personality description. *Journal of Personality*, 62(1), 45-66.
- Eaton, L. G., & Funder, D. C. (2000). *California Q-Sort and Riverside Behavioral Q-Sort prototypes of the five factors of personality*. Unpublished manuscript.
- Ehrler, D. J., Evans, J. G., & McGhee, R. L. (1999). Extending the Big-Five theory into childhood: A preliminary investigation into the relationship between Big-Five personality traits and behavior problems in children. *Psychology in Schools*, 36(6), 451-458.
- Friedman, H. S., Tucker, J. S., Schwartz, J. E., Tomlinson-Keasey, C., Martin, L. R., Wingard, D. L., et al. (1995). Psychological and behavioral predictors of longevity: The aging and death of the "termites." *American Psychologist*, 50, 1001-1010.
- Funder, D., & Block, J. (1989). The role of ego-control, ego-resiliency, and IQ in delay of gratification in adolescence. *Journal of Personality and Social Psychology*, 57(6), 1041-1050.
- Funder, D. C. (2001). Personality. *Annual Review of Psychology*, 52, 197-221.
- Funder, D. C., Furr, R. M., & Colvin, C. R. (2000). The Riverside Behavioral Q-sort: A tool for the description of social behavior. *Journal of Personality*, 68(3), 451-489.
- Funder, D. C., & Sneed, C. D. (1993). Behavioral manifestations of personality: An ecological approach to judgmental accuracy. *Journal of Personality and Social Psychology*, 64(3), 479-490.
- Gifford, R. (1991). Mapping nonverbal behaviors on the interpersonal circle. *Journal of Personality and Social Psychology*, 61(2), 279-288.
- Goldberg, L. R. (1990). An alternative "description of personality": The Big-Five factor structure. *Journal of Personality and Social Psychology*, 59(6), 1216-1229.
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48(1), 26-34.
- Goldberg, L. R. (2001). Analyses of Digman's child-personality data: Derivation of Big-Five factor scores from each of six samples. *Journal of Personality*, 69(5), 709-743.
- Goldberg, L. R., & Saucier, G. (1995). So what do you propose we use instead? *Psychological Bulletin*, 117(2), 221-225.
- Graziano, W. G., & Ward, D. (1992). Probing the Big-Five in adolescence: Personality and adjustment during a developmental transition. *Journal of Personality*, 60(2), 425-439.
- Gullone, E., & Moore, S. (2000). Adolescent risk-taking and the Five-Factor Model of personality. *Journal of Adolescence*, 23(4), 393-407.
- Jensen-Campbell, L. A., Adams, R., Perry, D. G., Workman, K. A., Furdella, J. Q., & Egan, S. K. (2002). Agreeableness, extraversion, and peer relations in early adolescence: Winning friends and deflecting aggression. *Journal of Research in Personality*, 36(3), 224-251.
- John, O. P., Caspi, A., Robins, R. W., Moffitt, T. E., & Stouthamer-Loeber, M. (1994). The "Little Five": Exploring the nomological network of the Five-Factor Model of personality in adolescent boys. *Child Development*, 65(1), 1.
- Kallasmaa, T., Allik, J., Realo, A., & McCrae, R. R. (2000). The Estonian version of the NEO-PI-R: An examination of universal and culture-specific aspects of the Five-Factor Model. *European Journal of Personality*, 14(3), 265-278.
- Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York: Guilford.
- Kenrick, D., & Funder, D. C. (1988). Profiting from controversy: Lessons from the person-situation debate. *American Psychologist*, 43(1), 23-34.
- Krueger, R. F., Schmutte, P. S., Caspi, A., Moffitt, T. E., Campbell, K., & Silva, P. A. (1994). Personality traits are linked to crime among men and women: Evidence from a birth cohort. *Journal of Abnormal Psychology*, 103(2), 328-338.
- Lamb, M. E., Chuang, S. S., Wessels, H., Broberg, A. G., & Hwang, C. P. (2002). Emergence and construct validation of the Big Five Factors in early childhood: A longitudinal analyses of their ontogeny in Sweden. *Child Development*, 73(5), 1517-1524.
- Lewis, M. (2001). Issues in the study of personality development. *Psychological Inquiry*, 12(2), 67-83.
- Markey, C. N., Ericksen, A. J., Markey, P. M., & Tinsley, B. J. (2001). Personality and family determinates of preadolescents participation in health-compromising and health promoting behaviors. *Adolescent and Family Health*, 2, 83-90.
- Markey, C. N., Markey, P. M., & Tinsley, B. J. (2003). Personality, puberty, and preadolescent girls' risky behaviors: Examining the predictive value of the Five-Factor Model of Personality. *Journal of Research in Personality*, 37, 405-419.
- Markey, P. M., Markey, C. N., Ericksen, A. J., & Tinsley, B. J. (2002). A preliminary validation of preadolescents' self-reports using the Five-Factor Model of personality. *Journal of Research in Personality*, 36(2), 173-181.
- McCrae, R. R. (2001). 5 years of progress: A reply to Block. *Journal of Research in Personality*, 25(1), 108-113.
- McCrae, R. R., & Costa, P. T. (1995). Trait explanations in personality psychology. *European Journal of Personality*, 9(4), 231-252.
- McCrae, R. R., Costa, P. T., & Busch, C. M. (1986). Evaluating comprehensiveness in personality systems: The California Q-Set and the Five-Factor Model. *Journal of Personality*, 54(2), 430-446.
- McCrae, R. R., Costa, P. T., Ostendorf, F., Angleitner, A., Hrebickova, M., Avia, M. D., et al. (2000). Nature over nurture: Temperament, personality, and life span development. *Journal of Personality and Social Psychology*, 78, 173-186.
- McCrae, R. R., & John, O. P. (1992). An introduction to the Five-Factor Model and its applications. *Journal of Personality*, 60(2), 175-215.
- Mervielde, I., Buyst, V., & De Fruyt, F. (1995). The validity of the Big-Five as a model for teachers' ratings of individual differences among children aged 4-12 years. *Personality and Individual Differences*, 18(4), 525-534.
- Mischel, W. (1968). *Personality and assessment*. New York: John Wiley.

- Mischel, W., Shoda, Y., & Rodriguez, M. L. (1992). Delay of gratification in children. In G. Loewenstein & J. Elster (Eds.), *Choice over time* (pp. 147-164). New York: Russell Sage.
- Ozer, D. J., & Reise, S. P. (1994). Personality assessment. *Annual Review of Psychology*, *45*, 357-388.
- Resing, W. C. M., Bleichrodt, N., & Dekker, P. H. (1999). Measuring personality traits in the classroom. *European Journal of Personality*, *13*(6), 493-509.
- Roberts, B. W., & Caspi, A. (2001). Personality development and the person-situation debate: It's déjà vu all over again. *Psychological Inquiry*, *12*(2), 104-109.
- Rosenthal, R., Rosnow, R. L., & Rubin, D. B. (2000). *Contrast and effect sizes in behavioral research*. New York: Cambridge University Press.
- Rothbart, M. K., & Ahadi, S. A. (1994). Temperament and the development of personality. *Journal of Abnormal Psychology*, *103*(1), 55-66.
- Scarr, S. (1992). Developmental theories for the 1990's: Development and individual differences. *Child Development*, *63*, 1-19.
- Scholte, R. H. J., van Aken, M. A. G., & van Lieshout, C. F. M. (1997). Adolescent personality factors in self-ratings and peer nominations and their prediction of peer acceptance and peer rejection. *Journal of Personality Assessment*, *69*(3), 534-554.
- Shedler, J., & Block, J. (1990). Adolescent drug use and psychological health: A longitudinal inquiry. *American Psychologist*, *45*(5), 612-630.
- Shiner, R. L. (1998). How shall we speak of children's personalities in middle childhood? A preliminary taxonomy. *Psychological Bulletin*, *124*(3), 308-332.
- Shiner, R. L., & Caspi, A. (2003). Personality differences in childhood and adolescence: Measurement, development, and consequences. *Journal of Child Psychology and Psychiatry*, *44*(1), 2-32.
- Shiner, R. L., Masten, A. S., & Roberts, J. M. (2003). Childhood personality foreshadows adult personality and life outcomes two decades later. *Journal of Personality*, *71*, 1145-1170.
- Shiner, R. L., Tellegen, A., & Masten, A. (2001). Exploring personality across childhood into adulthood: Can one describe and predict a moving target? *Psychological Inquiry*, *12*(2), 96-101.
- Snyder, M., & Ickes, W. (1985). Personality and social behavior. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd ed., Vol. 2, pp. 883-948). Reading, MA: Addison-Wesley.
- Thomas, A., & Chess, S. (1977). *Temperament and development*. New York: Brunner/Mazel.
- van Lieshout, C. F. M., & Haselager, G. J. T. (1994). The Big Five personality factors in Q-sort descriptions of children and adolescents. In C. F. Halverson, Jr., G. A. Kohnstamm, & R. P. Martin (Eds.), *The developing structure of temperament and personality from infancy to adulthood* (pp. 293-318). Hillsdale, NJ: Lawrence Erlbaum.
- Westen, D., & Rosenthal, R. (2003). Quantifying construct validity: Two simple measures. *Journal of Personality and Social Psychology*, *84*(3), 608-618.

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