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From Elementary School to Midlife: Childhood Personality Predicts Behavior During Cognitive Testing over Four Decades Later

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Abstract

The current study uses a prospective, longitudinal design and lifespan perspective to understand how child personality relates to directly observed adult behavior during cognitive testing. Teacher assessments of child Big Five personality in elementary school were correlated with directly observed behaviors during a videotaped cognitive test four decades later. Past work suggested Openness and Conscientiousness may relate to task-relevant academic behaviors. Childhood Openness was associated with several behaviors, even after controlling for participant's cognitive performance. Childhood Conscientiousness was also related to behavior, but not as expected. Other Big Five ratings were not reliably related to behavior. The study examined personality stability in a unique way and suggests a further examination of how Openness in children manifests in later behavior.

Keywords

Child Personality; Directly Observed Behavior; Personality Stability; Cognitive Testing; Big Five; Life-span Approach; Multi-Method

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Personality is a powerful predictor of many important behaviors and life events. Lifespan approaches to studying personality and important life outcomes have been increasingly utilized and help us understand life trajectories associated with one's personality. While there is a robust literature connecting child personality to later life outcomes, there are important knowledge gaps that require attention. We spend a significant amount of our childhood in a school context. As such, it is important to examine how our time spent in school influences our later development and behaviors. The current prospective, longitudinal study adds to the psychological literature in at least two important ways: 1) by using a lifespan approach in testing the degree of personality stability in a unique way- by using teacher ratings of personality in elementary school and behavioral ratings obtained decades later, and 2) by clarifying how the childhood Big Five relate to directly observed behavior in a widely used yet poorly understood context: cognitive testing.

The Big Five

The Five Factor Model (FFM) is the most widely accepted and researched model of personality and yields five largely independent dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism (reverse coded as Emotional Stability), and Openness to experience or culture/intellect. These five factors, known as the Big Five, have been empirically (McCrae & Costa, 1987) and lexically (Goldberg, 1990) derived and account for major portions of variance in individual differences in a variety of cultures and age groups (McCrae & Costa, 2008). Despite competing temperament based approaches and a number of measures aimed at studying personality in children, researchers have established firm evidence that the adult Big 5 model of personality extends to early childhood as well (Caspi, Roberts, & Shiner, 2005; Tackett, 2006). Temperament models in particular were found to be lacking psychological characteristics related to Openness to Experience (De Pauw & Mervielde, 2010; Tackett et al., 2012), a variable that has received increased attention for its ability to predict positive and negative behavioral outcomes (Abe, 2005; Gjerde & Cardilla, 2009; Herzhoff & Tackett, 2012). Longitudinal analyses of Big Five scores derived from teachers' observations in childhood and adult self-ratings revealed that participants' traits showed varying degrees of rank-order stability over four decades (Edmonds, Goldberg, Hampson, & Barckley, 2014; Hampson & Goldberg, 2006). As such, the current study builds on previous work using the Big Five to assess child personality allowing for future work in the lifespan tradition to make comparisons across age groups and developmental periods (John & Srivastava, 1999).

Child Personality & Behavior

Early childhood personality influences how a child perceives and interacts with the world around them (Shiner & Caspi, 2012). Longitudinal work employing teacher, parent and trained observer ratings consistently show that child personality predicts a variety of behavioral and life outcomes in later childhood, adolescence and adult life (Caspi, 2000; Digman, 1989; Friedman, 2000; Hampson & Goldberg, 2006). Various methods, including self-reports, third-person reports, and behavior observation have helped reveal personality consistency across a particular time span (Hampson, Andrews, Barckley, & Peterson, 2007; Hampson & Goldberg, 2006; Nave, Sherman, Funder, Hampson & Goldberg, 2010) or

identified the relation between personality and health, mortality, and other life milestones (Caspi, 2000; Friedman, 2000; Hampson, Edmonds, Goldberg, Dubanoski, & Hillier, 2015; Roberts et al., 2007; Shiner et al., 2003).

Using behavioral observation affords several psychological and methodological benefits. Firstly, it preserves the importance of the situation which researchers, in the aftermath of the person-situation debate, have agreed can elicit a person's characteristic behaviors. Secondly, behavior observation studies provide researchers with interpretations by unacquainted observers of detailed segments of first-hand or recorded behaviors so that data is unencumbered by biases or recall problems (Furr, 2009). Despite these gains, research in the psychology field seldom uses behavior observation (Baumeister, Vohs, & Funder, 2007; Furr, 2009). There thus remains a dearth of information regarding how behaviors associated with personality traits are seen and interpreted by observers. Teacher assessments of children and behavioral ratings from coders later in life is an especially rigorous form of personality stability because it involves predicting specific behaviors from a prior trait assessment (Hampson, 1988; Hampson & Goldberg, 2006).

Behavior and Context: Cognitive Testing

Choosing a scenario in which to observe behavior is of particular importance, for different situational variables can trigger one's personality to manifest different behaviors (Bem & Funder, 1978; Fleeson, 2007; Rauthmann et al., 2014). The current study used a one-on-one videotaped cognitive assessment task as the context in which to observe behavior. This work appears to be one of the first to systematically examine diverse behaviors (via behavioral observation of several coders) that may or may not occur during cognitive testing. A cognitive assessment in midlife is a context that likely contains many similar psychological features to an academic context in elementary school. Recent work examining the psychological properties of situations has suggested that situations in life can be evaluated and categorized into one of eight dimensions: Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Deception, and Sociality (e.g., DIAMONDS; Rauthmann, et al., 2014). Based on descriptions of psychological properties associated with DIAMONDS, a cognitive performance task would likely fall under two of the situational DIAMONDS factors: duty, where criteria include “job needs to be done; counted on to do something; minor details are important; rational thinking is called for”, and intellect where relevant criteria include “affords opportunity to demonstrate intellectual capacity; includes intellectual or cognitive stimuli” (Rauthmann et al., 2014). Child personality, particularly Openness and Conscientiousness, may predict behaviors directly relevant to being in a cognitive test. Prior work has suggested that childhood openness measures capture elements of intellect more so than adult measures of openness (Gjerde & Cardilla, 2009; Herzhoff & Tackett, 2012). The focus on intellect makes openness a strong candidate for being related to relevant behaviors during cognitive testing. In addition, child personality may predict who seems to enjoy being intellectually challenged in a dutiful or intellectual situation.

Situations have also been assessed by how behaviorally limiting they are (Ickes, Snyder, & Garcia, 1997). Strong situations as opposed to weak situations impose a greater amount of constriction on the variety of behaviors that can be enacted (Cooper & Withey, 2009; Ickes,

Snyder, & Garcia, 1997). By constricting behavior choices, strong situations are considered to be stressful (Shoda, Mischel, & Wright, 1993). Evaluative situations such as cognitive testing could be conceptualized as a strong situation given their behaviorally restrictive nature. Strong situations have further ramifications on behavior because of the cognitive-emotional responses they provoke. For example, evaluative situations have been shown to promote anxiety and consequently affect cognitive task performance (Van Yperen, 2007). We can also assess a cognitive testing situation through the lens of Self-Determination Theory (Ryan & Deci, 2000). A cognitive testing situation likely reduces one's sense of autonomy, given the carefully scripted nature of a cognitive test. Threat to one's autonomy may diminish the ability to detect personality-behavior correlations as people may feel less authentic in restrictive, strong situations (Ryan & Deci, 2000). In addition, one's need for competence can be challenged during a cognitive test. For some, this challenge may be a fairly pleasant experience where a person can demonstrate their talent and abilities. For others, a challenge to competence may be stressful. All of these factors contribute the characterization of a cognitive test situation as potentially full of duty and intellect, as a strong and evaluative situation, and where one's autonomy is threatened one's competence challenged. The current study is one of the first to observe and rate a wide variety of behaviors during a cognitive test. Given the various psychological components that may be salient during a cognitive test, the current study will attempt to relate behaviors witnessed during the cognitive test with childhood personality.

Child Personality and Later Cognitive Ability

A number of research studies and meta-analyses have been conducted connecting personality with intelligence, cognitive performance, and academic performance. For example, a large scale meta-analysis of over 100 samples and over 59,000 students in primary, secondary, and tertiary education analyzed the relationship between the Big Five personality dimensions and academic achievement and showed Conscientiousness having the highest correlation with academic achievement ($r = .19$), followed by Openness ($r = .10$), Agreeableness ($r = .07$), and both Emotional stability and Extraversion showing no association with academic achievement (r 's $.01$, $-.01$, respectively) (Poropat, 2009). Conscientiousness and Openness have routinely been associated with IQ and school grades (e.g., Digman, 1989; John et al., 1994; Judge, Higgins, Thoreson, & Barrick, 1999; Mervielde, Buyst & De Fruyt, 1995). Given these associations between childhood Conscientiousness and Openness and cognitive ability, we expected these traits to be more associated with observable behavior during a cognitive assessment than the remaining Big Five traits. Teachers are particularly well-positioned to assess Openness and Conscientiousness based on observations of classroom behaviors and work on childhood Big Five demonstrates that these traits can be reliably assessed (De Pauw & Mervielde, 2010; Herzhoff & Tackett, 2012; Tackett et al., 2012). Accordingly, observing behaviors in a somewhat comparable situation in adulthood, a cognitive assessment, provided a context in which to test the association between ability related traits in childhood and ability related behaviors in adulthood.

The Current Study

Past research has yet to assess whether directly observed social behaviors can be reliably obtained during cognitive testing. Child personality assessed by teachers has been connected to directly observed social behaviors in a semi-structured personality interview (Nave et al., 2010). Given the restrictive context of cognitive testing, it is an empirical question whether there will be variability in observable behavior. On the other hand, psychological properties during cognitive testing in later adulthood likely overlap with psychological characteristics of being in an academic setting as a child. Overlap in context may aid the discovery of relationships between child personality and later adult behavior. Based on previous examinations of the Big Five and cognitive performance, we expected to see directly observed behavior in a cognitive task be related to relevant personality traits, particularly with Openness and Conscientiousness. Descriptions of Openness by Five Factor Theory and empirical examinations in child development also lead us to believe that students assessed high on Openness may demonstrate behaviors showing intellectual interest, curiosity, and enjoyment for being in an intellectually stimulating task (Gjerde & Cardilla, 2009; Goldberg, 2001). Students assessed high on Conscientiousness may demonstrate behaviors related to task persistence, effort, and organization, though not necessarily any enjoyment for being in a challenging cognitive test. Prior work on the dataset we are working with suggests that conscientiousness ratings in children are more strongly related to intellect than in other samples (Goldberg, 2001). As such we may expect a pattern of relationships in similar intensity to Openness. Finally, no reliable pattern of behavior was predicted for childhood assessments of Extraversion, Neuroticism, and Agreeableness.

Methods

Participants

The current study used the Hawaii Personality and Health Cohort a rich, ethnically diverse dataset comprised of personality assessments of 2,418 elementary school children across the islands of Hawaii. The six subsamples from the cohort were obtained between 1959–1967 by John M. Digman (1963, 1989). A detailed description of the cohort and each of the six subsamples can be found in Goldberg (2001) and summary accounts of the subsamples can be found in Hampson and Goldberg (2006) and Nave and colleagues (2010). Participants in the present study were 207 participants (111 women, 54%; 96 men, 46%) with teacher assessments of personality from elementary school, who also participated in a half day in-person assessment at the Kaiser Permanente clinic in Honolulu 40 years later, and consented to being videotaped during tests of cognitive ability. The mean age of participants at the time of their clinic visit was approximately 50.

Procedure & Measures

Teacher personality assessments of participants as children—Elementary school teachers, who were accustomed to closely observing their students' behaviors over the course of the year, used a fixed quasi-normal distribution to rank-order all the children in their classroom from most to least characteristic for each item. Across the six subsamples, the number of items varied between 36 and 69 traits. Although item content differs across

samples, content similarity across any pair of samples is high, and the three largest samples included a core set of 39 items. Within each sample, a Big Five structure is clearly evident, (Digman, 1990; Goldberg, 2001), with high factor congruence evident in the largest samples (Edmonds & Hampson, this issue). Using all available items in each sample, Goldberg (2001) derived within sample Big Five factor scores, which have been subsequently used in multiple reports and continue to demonstrate high validity (Hampson & Goldberg, 2006; Hampson, Goldberg, Vogt, & Dubanoski, 2007; Hampson et al., 2015; Edmonds et al., 2013; Edmonds, Côté, & Hampson, 2015).

Cognitive assessment of participants as adults—Starting in 2003, members of the original child cohort, who by then were middle-aged adults, participated in a clinic assessment that included cognitive tests assessing elements of verbal fluency, concept formation, and visual matching (e.g., the Woodcock Johnson Cognitive Performance Measure, Woodcock, Mather, McGrew, & Schrank, 2001). The cognitive assessment was verbally administered one-on-one by a trained interviewer at Kaiser Permanente Center for Health Research in Honolulu, Hawaii. The directions for administration were standardized for all participants. The duration of the task was approximately 20–30 minutes in length.

Behavioral coding during cognitive testing—Videotapes of cognitive testing were viewed and coded by four undergraduate research assistants (RA's, out of a total pool of 12 assistants) at Rutgers University, Camden. RA's were randomly assigned to each video increasing the likelihood that an RA worked with numerous other combinations of RA's during the coding process. Prior to coding, RA's familiarized themselves with Riverside Behavioral Q-Sort version 3.11 (RBQ-3.11: Funder, Furr, & Colvin, 2000; Furr, Wagerman, & Funder, 2010). Clarification about the wording and meaning of behavioral items were addressed during weekly lab meetings. RA's were instructed to watch the entire cognitive testing portion of the videotape. Coders were instructed to rate behavior without taking notes and to provide a summary judgment of behavior across the complete cognitive test rather than assess moment-to-moment behaviors that may lack overall context and that may change with continued viewing of the situation. RA's completed the Q sort immediately after watching the video. Coders were instructed to rate only behaviors witnessed from the videotape rather than make inferences without any behavioral data to support their conclusion. The behavioral coding strategy has been used numerous times in previous work and is well-documented in Furr and Funder (2007). Behavioral ratings were aggregated from the four RA's to form a composite rating for each of the 68 behavioral items.

The Riverside Behavioral Q-Sort-version 3.11 (RBQ-3.11: Funder, Furr, & Colvin, 2000; Furr, Wagerman, & Funder, 2010), is a 68-item assessment tool designed to describe the range of a person's behavior. RBQ items were written to capture meaningful and observable social behaviors at a more global level compared to other behavioral coding schemes that may focus on counting the number of eyebrow twitches or smiles (see Funder & Colvin, 1991; Furr & Funder, 2007—for a description on the level of analysis that the RBQ captures). Items include: "exhibits social skills," "displays ambition," and "speaks fluently; expresses ideas well." Each behavior is sorted into one of nine categories (1 = *extremely uncharacteristic*, 9 = *extremely characteristic*) each with a predetermined number of items,

forming a forced choice, quasi-normal distribution. The Q-sort approach allows researchers to examine how behaviors directly relate to one another, providing an index of behaviors that are most characteristic and uncharacteristic. To index level of agreement between the four behavioral coders that watched each video, intraclass correlations were computed for each participant that resulted in an average intraclass $r = .78$ ($SD = .08$), indicating high agreement between judges.

Power Analysis

It is increasingly important in research to document whether or not a particular study has adequate power to detect effects of the magnitude typically encountered in the field (Fraleigh & Vazire, 2014). Previous analyses of effect sizes across over 25,000 studies in personality and social psychology find an average effect size of $r = .21$ (Richard, Bond, & Stokes-Zoota, 2003). Power analyses for the current study were conducted in *R* using the “pwr” package. Using our current sample ($n = 207$), provides 83% power to detect an effect as small as $r = .20$.

Results

Given the large number of child personality-behavior correlations to be examined, randomization procedures were employed to assess whether the number of observed, significant, child personality-behavior correlations were due to chance (Sherman & Funder, 2009). According to randomization analyses, we would expect to obtain about 3.5 personality-behavior correlations by chance. As predicted, childhood assessments of Openness yielded several correlates with behaviors during cognitive testing at greater than chance levels four decades later (see Table 1). For Openness, the probability of finding 15 personality-behavior correlations by chance, across 10,000 trials is $p = .01$. For Conscientiousness, the number of personality-behavior correlations (i.e., 5) exceeded what we would expect to find by chance (i.e., 3.5) however, the probability across 10,000 trials is $p = .18$ and as such the correlations should be interpreted with caution (See Table 2). As predicted, childhood assessments of Extraversion (0 personality-behavior correlations at $p < .05$), Emotional Stability (2), and Agreeableness (4) did not yield reliable behavior correlations at greater than chance levels (p 's $> .20$) or with effect sizes in excess of $r = .20$. A complete list of personality-behavior correlations for all Big Five dimensions is provided on the Open Science Framework website.¹

Controlling for Cognitive Performance during a Cognitive Task

A potentially important covariate when examining personality-behavior associations during a cognitive task is a participant's cognitive performance. Coders were instructed to focus on global behavioral cues during the entire length (approximately 20–30 minutes) of the cognitive testing, as compared to moment-to-moment online assessments of behavior. As such, coders did not take notes of specific utterances or answers that participants provided. In addition, coders did not have access to a scoring key for participant's responses, which

¹Full Big Five dimensions and behavior correlate table can be found at: https://osf.io/5cbj3/?view_only=975d381fc84a469191414f7c3c754b7e

were combined to form scale scores related to concept formation, verbal fluency, and visual matching. However it is still possible that behavioral coders could be paying attention to responses provided by participants and using correct or incorrect responses to categorize behaviors. As a result, we ran regressions using scored responses on concept formation, verbal fluency, and visual matching separately as predictors of RBQ behavioral items. Residuals from the regression analyses were saved as new variables. The residualized variables were then correlated with teacher ratings of child personality, and meta-analytically combined together to result in one cognitive performance measure that was a product of the average personality-behavior correlations across the three performance domains. Results from this robust, conservative approach would highlight how child personality predicts behavior in a cognitive task irrespective of participant's actual cognitive performance during testing. Correlations between residualized behavioral items and child personality ratings would speak to the robustness in personality continuity across similar contexts from childhood to mid-life.

Table 1 provides associations between childhood Openness and behavior observed during the cognitive assessment. Of all the childhood Big Five, Openness had the largest number of correlations, with eighteen behaviors with effect sizes above $r = .12$ and p-values less than .10. Taking into account the studies' statistical power, we found five personality-behavior correlations at or above $r = .20$. When controlling for actual cognitive performance, childhood ratings of openness still demonstrated strong, albeit diminished associations with a variety of behaviors, with 10 behaviors being associated with openness at $p < .10$ and absolute r 's $> .12$. For example, when controlling for cognitive performance, participants were still perceived as exhibiting a high degree of intelligence, displaying ambition, speaking fluently, showing interest in intellectual matters, and not giving up when faced with obstacles.

Childhood Conscientiousness was related to six behaviors, many of which show limited task relevance (see Table 2). Displaying ambition seems to be especially relevant to cognitive testing and a case can be made that two other behaviors: not seeking advice and not talking about oneself, have task relevance by keeping one focused on the testing at hand.

Lastly, the construct description for Openness could lead one to expect those high in Openness would enjoy participating in a challenging, cognitive test. The results of the current study, however fail to connect child personality assessments of Openness to the perceived enjoyment of being in a cognitive test: "high enthusiasm and energy level", and "seems to enjoy situation" did not show any statistically significant associations with childhood personality (r 's $< .15$).

Discussion

The current study used a prospective, longitudinal design and lifespan perspective to explore how child Big Five personality traits relate to a variety of behaviors assessed during cognitive testing four decades later. Earlier work has demonstrated that the Big Five can be reliably assessed in children and that temperament models fail to capture aspects of Openness, an increasingly important trait that is related to a number of positive and negative

behavioral outcomes. This study provided a unique demonstration of personality stability, as evidenced by teacher assessments of child personality being associated with various behaviors in adulthood during cognitive testing. Emerging work on child Conscientiousness and Openness provided exploratory predictions of behaviors related to intellect, curiosity, enjoyment for Openness, and effort, persistence, organization, but not enjoyment for Conscientiousness. Results demonstrated a robust association with Openness for a number of seemingly task-relevant behavior, though no support for the notion that children rated high in Openness by their teacher in elementary school would enjoy being in a cognitive testing environment as adults in midlife.

In line with how Five Factor Theory conceptualizes Openness and with past work on Openness and academic performance, childhood Openness was associated with numerous task-relevant behaviors during a cognitive assessment. The association between openness and various behaviors remained even when controlling for cognitive performance, suggesting that coders were not merely paying attention to participant's responses and were likely capturing behaviors occurring during cognitive testing. A number of behaviors that seem to be task relevant and include: "exhibiting a high degree of intelligence, displaying ambition, not giving up when faced with obstacles". Only a small handful of behaviors (e.g., exhibits social skills, seems likable, exhibits condescending behavior, interpersonally awkward) seem to be not directly relevant to the task or to earlier work on child personality, though future research is needed to empirically establish what behaviors are in fact task relevant and task irrelevant.

Children high in Openness did not display any behaviors indicating an enjoyment of being in the potentially intellectually stimulating cognitive test, however they did express interpersonal behaviors consistent with being more at ease in a potentially stressful situation. Childhood Conscientiousness was also related to behavior, but not necessarily as predicted. Finally, ratings of Extraversion, Agreeableness, and Neuroticism did not show a reliable pattern of association with directly observed behaviors.

The current study provided an unusual form of evidence for personality stability, particularly with respect to Openness. The demonstration of personality stability using teacher assessments of child personality based on observation of school behavior and direct observations of behavior during a cognitive assessment over four decades later is especially compelling. This finding suggests the potential for future research, in which traits prospectively predict directly observed later behavior in specific contexts relevant to that trait, to identify more evidence for this form of stability. Using direct observation of behavior provides non-biased and situation-specific behavioral data. Moreover, the choice of a comparable, strong, evaluative cognitive task situation allows for greater illumination of pathways in which personality influences behavior.

Limitations & Future Directions

The psychological properties of being in a cognitive testing environment have been indirectly analyzed using a situational taxonomy (DIAMONDS; Rauthmann et al, 2014). The current study does not have self-reported ratings of perceived stress or evaluativeness of the situation during the cognitive testing. Future research should incorporate directly

assessed measures of the psychological properties of contexts that participants encounter and use that information to relate back to personality-behavior associations. Future research should also incorporate behavior observation in various contexts. More work needs to be done to psychologically assess the properties of situations and how they may influence behavior (e.g., Rauthmann, 2014). Future work examining personality stability can investigate how people remain consistent, or adapt their behavioral expressions when facing different situations.

The current study examined personality at the factor level, a level that may be too molar for understanding why personality is associated with particular behaviors and outcomes. Future work examining child personality at the facet or individual item level may help tease apart the various ways that elements of conscientiousness and openness relate to academic and behavioral outcomes. Other work in child personality suggests looking at facet elements of personality and gender, as elements of openness like fantasy, imagination and curiosity may be more behaviorally relevant to males than to females (Gjerde & Cardilla, 2009). Finally, it would be important to examine whether ethnic differences yield different behavioral patterns or is Openness robustly related to behavior regardless of ethnicity.

Directly observed behavior can also be used as a way of understanding potential psychological processes involved when personality relates to life outcomes. Greater emphasis on a lifespan perspective can help us uncover how spending a significant amount of our childhood in school helps shape, mold, and predict future behaviors and life outcomes in similar and across different contexts (Hampson, 2012). A next step can help us begin to think about processes and mechanisms that help explain personality stability, but also personality-behavior and personality-outcome associations. In conclusion, child personality predicts later adult behavior. Future directions involving what the size of effects mean, the theoretical significance behind results obtained, and mechanisms by which personality, behavior, and important life outcomes relate to one another are needed.

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Highlights

- Child Big 5 personality and adult behavior during cognitive testing was examined
- Evidence for personality stability with teacher ratings and observed behavior
- Child Openness relates to a number of task relevant behaviors
- Openness relates to adult behavior even when controlling for cognitive performance
- Child Conscientiousness weakly relates to behavior and not as expected

Table 1

Teacher's ratings of Openness correlated with direct observations of behavior in a cognitive task.

## - RBQ Item	<i>r</i>	Residual <i>r</i>
	<i>N</i> = 207	<i>N</i> = 199
<u>Positive</u>		
23 - Exhibits a high degree of intelligence	.28 ***	.17 *
45 - Displays ambition	.23 **	.14 *
53 - Speaks fluently & expresses ideas well	.23 **	.14 *
41 - Shows interest in intellectual or cognitive matters	.22 **	.14 *
06 - Appears to be relaxed and comfortable	.16 *	.11
16 - Shows a wide range of interests	.16 *	.11
07 - Exhibits social skills	.15 *	.13 ⁺
28 - Seems likable	.15 *	.13 ⁺
64 - Concentrates on or works hard at a task	.15 *	.09
27 - Exhibits condescending behavior	.15 *	.14 ⁺
42 - Seems to enjoy situation	.12 ⁺	.08
<u>Negative</u>		
50 - Gives up when faced with obstacles	-.31 ***	-.23 **
47 - Expresses self-pity or feelings of victimization	-.19 **	-.17 *
13 - Exhibits awkward interpersonal style	-.18 **	-.14 ⁺
21 - Expresses insecurity	-.15 *	-.08
22 - Shows signs of tension or anxiety	-.14 *	-.11
60 - Seems detached from the situation	-.13 ⁺	-.11
35 - Is unusual or unconventional in appearance	-.12 ⁺	-.07

Note. Residual *r* controls for cognitive performance. Gender held constant.

p < .001,

**
p < .01,

*
p < .05,

⁺
p < .10.

Table 2

Teacher's ratings of Conscientiousness correlated with direct observations of behavior in a cognitive task.

## - RBQ Item	<i>r</i>	Residual <i>r</i>
	<i>N</i> = 207	<i>N</i> = 199
<u>Positive</u>		
03- Interested in what partner says	.22 **	.15 *
45- Displays ambition	.15 *	.09
43- Says or does something interesting	.14 *	.12
46- Blames others	.13 ⁺	.13 ⁺
<u>Negative</u>		
02- Volunteers information about self	-.16 *	-.16 *
29- Seeks advice	-.14 *	-.13 ⁺
26- Seeks reassurance	-.13 ⁺	-.11

Note. Residual *r* controls for cognitive performance. Gender held constant.

p < .001,

**
p < .01,

*
p < .05,

⁺
p < .10.