



Brief Report

Do as you're told! Facets of agreeableness and early adult outcomes for inner-city boys



Margaret L. Kern^{a,*}, Angela L. Duckworth^a, Sergio S. Urzúa^b, Rolf Loeber^c, Magda Stouthamer-Loeber^c, Donald R. Lynam^d

^a Department of Psychology, University of Pennsylvania, United States

^b Department of Economics, University of Maryland, United States

^c Department of Psychology, University of Pittsburgh, United States

^d Department of Psychological Sciences, Purdue University, United States

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ABSTRACT

With data from the middle cohort of the Pittsburgh Youth Study, a prospective longitudinal study of inner-city boys, we examined whether Big Five agreeableness facets could be reliably recovered in this sample, and whether facets predicted educational, occupational, social, and antisocial life outcomes assessed a decade later. Caregivers described their adolescent boys' personalities using the Common California Q-Set; twelve years later, participants were interviewed and court records were obtained. Factor analyses recovered two facets: compliance and compassion. Compliance predicted more schooling and lower risk of unemployment, teenage fatherhood, and crime; compassion related to longer committed relationships. Findings highlight the value of studying personality at the facet level.

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1. Introduction

Big Five agreeableness relates to numerous beneficial life outcomes. Agreeableness positively relates to academic achievement (Poropat, 2009). In the workplace, agreeableness is beneficial in occupations requiring considerable interpersonal interaction and helping others (Barrick, Mount, & Judge, 2001; Mount, Barrick, & Stewart, 1998), though it is inversely associated with wealth and income (Duckworth, Weir, Tsukayama, & Kwok, 2012; Judge, Livingston, & Hurst, 2012). At work, team players are seen as likeable, cooperative, and even-tempered (Hogan, 2007).

Agreeableness is particularly important in social domains (Jensen-Campbell, Knack, & Gomez, 2010). Numerous studies have linked low agreeableness with psychopathy, risky sexual behavior, crime, and aggression (e.g., Decuyper, de Pauw, de Fruyt, de Bolle, & Clerco, 2009; Hoyle, Fejfar, & Miller, 2000; Miller, Lynam, Widiger, & Leukefeld, 2001). In children, agreeableness has been related to harmonious interpersonal relationships, positive school performance, healthier eating habits, and lower levels of depression, bullying, and victimization (Jensen-Campbell et al., 2010), and low agreeableness relates to delinquency and aggression (e.g., Gauthier, Furr, Mathias, Marsh-Richard, & Dougherty, 2009; Le Corff & Toupin, 2009; Lynam et al., 2005; Salekin, Debus, & Barker, 2010). In their review of agreeableness and various life outcomes,

Jensen-Campbell et al. (2010) concluded that “agreeableness may be the path to enduring interpersonal relationships, happiness, success, and well-being” (p. 1042).

Although the Big Five factors demonstrate predictive value for life outcomes (Ozer, & Benet-Martinez, 2006), underlying facets provide incremental predictive ability (e.g., Paunonen, 1998; Paunonen & Ashton, 2001). Theoretical models of adult Big Five personality split agreeableness into various dimensions. The NEO-PI-R breaks agreeableness into trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness facets (Costa & McCrae, 1995). DeYoung, Quilty, and Peterson (2007) propose politeness and compassion factors. The HEXACO model splits agreeableness into honesty-humility and agreeableness factors (Ashton & Lee, 2008).

With a few notable exceptions, the Big Five factors and their facets have received less attention in the child and adolescent literature (Halverson et al., 2002). Using items from the common language California Q-set (CCQ; Caspi et al., 1992), John, Caspi, Robins, Moffitt, and Stouthamer-Loeber (1994) established the “little five” (i.e., Big Five factors for children). More recently, using an internet-based sample of 16,000 children and adolescents, Soto and John (in press) suggested a “little six” – the Big Five factors plus an additional activity factor. At the facet level, Halverson et al. (2002) found antagonism (reversed; e.g., discourteous, rude, and aggressive) and strong-willed (reversed; e.g., bossy and self-assertive) facets. An additional facet – considerate (e.g., caring, empathetic, and sensitive to others) – was classified under extraversion, but

* Corresponding author.

E-mail address: mkern@sas.upenn.edu (M.L. Kern).

also cross-loaded on the agreeableness factor. In a Flemish sample, agreeableness included altruism, dominance, egocentrism, compliance, and irritability facets (Mervielde & De Fruyt, 2002). In a cross-national study across child ages, agreeableness was characterized by antagonism through age 11, but beginning at age 12, a second factor – characterized by care and sensitivity to others – appeared (Tackett et al., 2012).

In this study, we focus on an at-risk sample – the middle cohort of the Pittsburgh Youth Study (PYS) – followed across the transition from adolescence into young adulthood. At age 12–13, caregivers rated the boys' personalities using the CCQ. In cross-sectional analyses, John and colleagues (1994) found that low agreeableness related to greater delinquency and externalizing disorders. In the present study, we further break the agreeableness factor into two facets, and examine prospective relations to early adult outcomes assessed over a decade later. Since the boys were early adolescents when their personalities were assessed, we expected that antagonism and compassion facets would be distinguishable, in line with Tackett and colleagues' (2012) findings. We predicted that antagonism would negatively relate to educational attainment and employment and positively relate to antisocial outcomes, whereas compassion would positively relate to social outcomes.

2. Method

2.1. Participants

In the spring of 1987 and 1988, 868 boys were randomly selected from public schools in the city of Pittsburgh, Pennsylvania. The boys, caregivers, and teachers were interviewed (see Loeber et al., 2012 for study details). The boys were classified for risk for subsequent delinquency and criminal behavior, based on prior evidence of disruptive behavior problems. The 30% at highest risk and a randomly selected subset of the remaining 70% were included in the initial study, resulting in a baseline sample of 508 fourth grade boys (average age 10).¹ About 54% of the sample was Black, 43% was White, and the remaining 3% were of other ethnic backgrounds. The sample was representative of the general population in terms of IQ (mean IQ = 101.62, *SD* = 15.78).

In the summer of 1990, when the boys were between 12 and 13 years old, they were invited to visit the University of Pittsburgh with a primary caregiver for a full-day testing session, during which personality measures were collected. About 80% of the boys were tested, and there were no significant differences between tested and untested participants in terms of risk status, race, socioeconomic status (SES), or delinquency (White et al., 1994). In 1999–2000, when the participants were in their mid-20s, about 60% of the original sample completed a follow up life history interview (*N* = 297 individuals, mean age = 24.04 years, *SD* = 0.91).²

The current investigation included 266 participants who completed the adolescent personality assessment and the adult interview. Those excluded were more likely to be Black, and from a lower neighborhood status and single parent home ($r = .14-.18$, $ps < .01$). No other differences between included and excluded participants were apparent in terms of age, family SES, personality, IQ, education, occupation, or delinquency ($r = .01-.07$, $ps > .10$).

¹ The sampling procedure overrepresents high risk boys compared to the general population; weights were previously constructed to represent the general population. Adjusting our analyses by these weights did not substantially alter any of our results; for simplicity we present the unweighted results.

² The Pittsburgh Youth Study included three cohorts (youngest, middle and oldest). The youngest and oldest completed numerous repeated assessments. Due to funding, follow up for the middle sample was restricted to seven half-year assessments and a single adult assessment around age 24 (Loeber et al., 2012).

2.2. Adolescent measures

Caregivers (most typically mothers) rated their son's personality using the common language California Q-set (CCQ; Caspi et al., 1992). The CCQ comprises 100 items describing a wide range of behaviors. The measure is based on the original Q-set measure, developed by Block and Block (1980) to allow professionals to classify a person's personality in psychodynamic terms. Caspi et al. (1992) modified the language for lay raters. John et al. (1994) aligned 48 of the items to the Big Five factors (agreeableness: 13 items; conscientiousness: 9 items; extraversion: 9 items, neuroticism: 10 items; openness to experience: 7 items), and provided evidence for factor reliability and validity. For the current analysis, we focused on the 13 agreeableness items.

As covariates, we included adolescent IQ (based on a short form of the WISC-R intelligence test), race (0 = White/other ethnicity, 1 = Black), family socioeconomic status (SES; based on Hollinghead's (1975) two-factor index), neighborhood SES, single parent home (0 = lived with both parents, 1 = single parent/ alternative structure), delinquency classification (based upon delinquent activities to date, 0 = none, 5 = multiple serious acts), and age at the adult interview.

2.3. Life outcomes in early adulthood

When the participants were young adults (Mean age = 24.11, *SD* = .93, Range = 21.83–27.35 years), trained interviewers conducted a life history interview in the participants' homes, asking the men a series of structured questions on their living situation, partners and marriages, education, work, and arrests since age 16. In addition, court records documenting convictions through age 27 were obtained. To provide a comprehensive test of available information, we selected dichotomous and continuous variables capturing educational, occupational, social, and antisocial life domains.³

Education was coded as a continuous variable in terms of total years of schooling or equivalent training, ranging from 7 (junior high) to 18 (graduate level training). A dichotomous variable denoted if the participant was expelled or dropped out of high school (0 = no, 1 = yes). For occupation, participants indicated whether they were currently employed (0 = no, 1 = yes). For social outcomes, we coded the length of time living in a committed or married relationship (indicating positive social relationships) and if they had fathered one or more children prior to age 18 (indicating promiscuity, 0 = no, 1 = yes). For antisocial behavior, we included self-reported criminal behavior (whether participants had ever been arrested, 0 = no, 1 = yes) and lifetime convictions based on court records.

2.4. Analytic strategy

Our first question was whether multiple agreeableness facets could be derived from the original agreeableness factor constructed by John et al. (1994). We randomly split the sample into two equal halves ($n = 133$) to develop and then test our factor model. Working with the development sample, we performed a principle components analysis (PCA) with Varimax rotation, extracting two factors. We then estimated a confirmatory factor model in the test sample. After establishing the final factors, we combined the development and test samples and ran a final confirmatory

³ Although there are many outcomes available for the youngest and oldest PYS cohorts, outcomes for the middle sample were limited to the life history interview and court records. We chose variables from the interview that broadly captured each section, excluding more specific questions (e.g., details on marriages, children, and living situation).

model, obtaining latent factor loadings for the full sample. Finally, we used linear and logistic regression to estimate prospective personality influences on adult outcomes, controlling for the demographic characteristics.⁴

Exploratory and regression analyses were conducted using SPSS (version 21) software; confirmatory analyses were conducted using the lavaan package (version .5–12, Rosseel, 2012) in R (version 2.15.2). For model fit, we examined the chi square difference test between the one and two factor models, as well as the root mean square error of approximation (RMSEA) with 90% confidence intervals (CI) and the Standardized Root Mean Residual (SRMR).

3. Results

3.1. Agreeableness facets

We conducted a principle components analysis with the development sample ($n = 133$) of the 13 agreeableness items. Two clear factors emerged, with adequate reliability (factor 1: Cronbach's $\alpha = .77$; factor 2: $\alpha = .76$). With the test sample ($n = 133$), we tested confirmatory factors models, comparing one and two factor models. The two-factor model fit the data adequately (RMSEA = .05 [90% CI = .02, .08], SRMR = .06) and fit better than the one-factor model ($\Delta\chi^2(1) = 20.88, p < .001$; RMSEA = .07 [90% CI = .05, .09]; SRMR = .07).

Combining the development and test samples, we estimated a final confirmatory model, which again demonstrated adequate fit (RMSEA = .06 (90% CI = .04, .07), SRMR = .05) and fit better than the one factor model ($\Delta\chi^2(1) = 70.86, p < .001$). The two aspects were correlated ($r = .54$, latent correlation = .72), yet distinct and independently reliable ($\alpha = .74$ and .75, respectively). Items and standardized latent factor loadings are summarized in Table 1. We labeled these compliance (versus antagonism/dominance) and compassion (versus callousness).

To further support the distinctiveness of the facets, we correlated them with the other four personality factors derived by John et al. (1994). Compliance was more strongly related to openness to experience ($r_{f1} = .25; r_{f2} = .07, Z = 3.15, p < .001$) and conscientiousness ($r_{f1} = .39; r_{f2} = .30, Z = 1.62, p = .05$) than compassion. Compassion was more strongly related (inversely) to neuroticism ($r_{f1} = -.12; r_{f2} = -.21, Z = 1.64, p = .05$) than compliance. Each facet was equivalently unrelated to extraversion ($r_{f1} = -.05; r_{f2} = .02, Z = 1.26, p = .10$).

3.2. Prospective prediction of life outcomes

Descriptive and correlational statistics are summarized in Supplemental Table S1. On average, men completed 12 years of schooling and 34.6% dropped out or were expelled from school. Over a fourth (28.2%) of the men were unemployed at the time of the adult interview. About half (52.6%) were married or in a committed relationship and 19.2% had been teenage fathers. Court records indicated that 46.1% had been convicted of one or more crimes; 40.6% self-reported ever being arrested.

Bivariate correlations indicated that compliance related to all four life domains whereas compassion only related to social/anti-social domains. Compliant boys completed more years of schooling ($r = .27, p < .001$), were more likely to be employed in young adulthood ($r = .20, p = .001$), were less likely to be teenage fathers ($r = -.15, p = .01$), or to be arrested (self-report, $r = -.23, p < .001$) or convicted of crime (court records, $r = -.18, p = .002$) than antag-

onistic boys. Compassionate boys were less likely to be arrested (self-report, $r = -.19, p < .001$), convicted of crime (court records, $r = -.12, p = .02$), and trended toward longer relationships with their spouse/ partner ($r = .11, p = .08$) than callous boys.

Using linear and logistic regression, we estimated prospective influences of compliance and compassion simultaneously on adult outcomes while also controlling for covariates. Table 2 summarizes the parameter estimates (for years of schooling and years living with spouse/partner) or hazard ratios (for dropping out/expelled from school, employment status, teenage fatherhood, ever arrested, and court-reported convictions) for the four life domains (Supplemental Table S2 summarizes full models). For education, compliance related to completing more years of school whereas compassion related to completing fewer years of school. Compliance related to being employed; compassion was not significantly related. Socially, compliance related to less teenage fatherhood but was unrelated to years living with spouse/partner; whereas

Table 1
Final standardized factor loadings for the two agreeableness facets.

Facet 1: Compliance	$\alpha = .74$
He's bossy and likes to dominate other people (R)	.66
He gets along well with other people	.66
He teases and picks on other kids (including his own brothers and sisters) (R)	.59
He tries to get others to do what he wants by playing up to them; he acts charming in order to get his own way (R)	.57
He is stubborn (R)	.55
Most adults seem to like him	.46
He makes good and close friendships with other people	.44
Facet 2: Compassion	$\alpha = .75$
He is considerate and thoughtful of other people	.83
He is helpful and cooperates with other people	.72
He is a warm person and responds with kindness to other people	.68
He gives, lends, and shares things	.50
He tries hard to please other people	.45
He is protective of others. He protects people who are close to him	.33

Note: $N = 266$. Latent facet correlation = .72. (R) indicates items that were reversed scored for composite factors.

Table 2
Summary of linear and logistic regression analyses predicting early adult outcomes from compliance and compassion, controlling for demographics, IQ, and adolescent delinquency.

Outcome	Model type	Compliance	Compassion
Total years of schooling	Linear	$b = 0.49^{***}$ (CI = 0.26, 0.73)	$b = -0.29^*$ (CI = -0.53, -0.04)
Expelled/dropped out of school	Logistic	HR = 0.66 [†] (CI = 0.46, 0.94)	HR = 1.34 (CI = 0.93, 1.94)
Employed at interview	Logistic	HR = 1.67 ^{**} (CI = 1.16, 2.39)	HR = 0.80 (CI = 0.55, 1.15)
Seasons in a relationship	Linear	$b = -0.58$ (CI = -1.40, 0.24)	$b = 1.25^{**}$ (CI = 0.40, 2.10)
Teenage father	Logistic	HR = 0.67 [†] (CI = 0.46, 0.98)	HR = 1.17 (CI = 0.79, 1.73)
Ever arrested (self-report)	Logistic	HR = 0.71 [†] (CI = 0.51, 0.98)	HR = 0.91 (CI = 0.65, 1.27)
Criminal convictions (court records)	GLM	HR = 0.83 [†] (CI = 0.70, 1.00)	HR = 1.02 (CI = 0.83, 1.26)

Note: Compliance and compassion were entered simultaneously with covariates (age at the adult interview, Black, one parent home, family SES, neighborhood SES, adolescent delinquency, and IQ). b = Unstandardized parameter estimate. HR = hazard ratio, CI = 95% confidence interval, GLM = generalized linear model, estimated with a negative binomial probability distribution. See Supplemental Table S2 for complete models.

[†] $p < .05$.
^{**} $p < .01$.
^{***} $p < .001$.

⁴ As the objective total number of convictions variables was severely positive skewed, it was estimated with a generalized linear model with a negative binomial probability distribution.

compassion was unrelated to teenage fatherhood but predicted longer relationships. Finally, compliance related to fewer arrests (self-report) and convictions (court records), whereas compassion was not significantly related to antisocial outcomes.

4. Discussion

In 266 at-risk adolescent boys, a factor analysis of Big Five agreeableness items rated by caregivers yielded two facets identifiable as compliance/antagonism and compassion/callousness. In prospective longitudinal analyses of life outcomes in young adulthood controlling for demographic characteristics, adolescent delinquency, and IQ, compliance predicted more years of schooling, being employed, lower risk of teenage fatherhood, and lower risk of arrest of criminal conviction. Compassion predicted longer relationships with a spouse/partner.

Our results support the value in using more nuanced facet-like dimensions in predicting life outcomes. Tackett et al. (2012) noted that child agreeableness is dominated much more by antagonism than in adult personality models. Similarly, the first facet reflected being dominant/antagonistic versus compliant. This single dimension was predictive of education, work, and antisocial outcomes across more than a decade. Compassion described a more emotional, empathic response to others (e.g., being considerate, warm, and kind). DeYoung et al. (2007) also suggested a compassion facet, comprising warmth, sympathy, and related traits, representing an emotional, empathic connection to other people. Across more than a decade, compassion related to better social relationships (represented by longer relationships with spouse or partner), supporting such social connection.

The HEXACO model of personality (Ashton & Lee, 2008) offers a useful alternative theoretical framework for understanding the current findings. In the HEXACO model, agreeableness splits into two factors similar to the aspects we identified but named instead honesty-humility (H) and agreeableness (A). People high in H are sincere and modest; people low in H are deceitful, pompous, and greedy. Similarly, the compliance facet included items such as “behaves in a dominating manner” (reversed) and “manipulates others” (reversed). People high in A are described as patient and tolerant; people low in A are critical of others and quarrelsome. Similarly, the compassion facet included items such as “considerate and thoughtful” and “helpful and cooperative.” Lee and Ashton (2012) propose that “high-H people cooperate with you even when they could get away with exploiting you; high-A people cooperate with you even when you are not really cooperating fully with them” (p. 29). Consistent with this distinction, the compliance facet in our longitudinal analyses was a more consistent predictor of positive life outcomes than was the compassion facet.

Several limitations of our study are worth highlighting. First, personality was assessed using only caregiver reports. A more precise and accurate measure of personality would have included alternative viewpoints (e.g., teacher and self-report ratings). Second, our sample only included inner-city boys, and was a subset of the larger PYS sample. Considerable more data are available for the youngest and oldest cohorts. We do not know whether similar patterns would occur with, for instance, inner-city girls or rural or suburban boys. Our findings require replication in other samples before firm conclusions can be drawn.

In sum, our investigation suggests considerable value in estimating the effect of Big Five agreeableness on consequential life outcomes at the facet level: Compliance may be more predictive than compassion in terms of objective measures of success. Pausonon and Jackson (2000) note: “if one can identify theoretically meaningful, internally consistent classes of behavior that are able to predict socially and personally significant life criteria, then such

personality dimensions are important” (p. 833). We agree. Our findings particularly demonstrate that studying personality at the facet rather than Big Five factor level can yield important and clarifying insights.

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Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.jrp.2013.08.008>.

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