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Eysenck's Theory of Conscience: Antisocial Behaviour and Moral Reasoning

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Abstract

Two hypotheses were tested in this study. The first hypothesis was Eysenck's hypothesis that individuals low on his E and N traits are more likely to acquire behavioural inhibitions than individuals who are high on both traits and therefore have better behaviour. Second, the investigators hypothesized that individuals low on E and N would also have higher scores on a measure of social/moral reasoning. The study employed 60 student participants between 11 and 15 years of age. The participants were placed in either a high group ($n = 30$) or a low group ($n = 30$) based on their E and N trait scores. Participants in the two groups were matched for age and gender. Scores on the P trait were controlled to allow a better test of the E and N trait combination. Differences between the groups on self-reported externalizing conduct problems were examined. Participants' who scored low on the E and N traits scored significantly lower ($p < .001$) on self-reported behaviour problems. In a regression analysis, the interaction of E and N (E x N) accounted for more of the variance ($R^2 = .16$) in the measure of behaviour than either trait alone. There was also a significantly higher moral reasoning score ($p < .001$) for the participants from the low E and low N group. In a regression analysis, the E score alone accounted for the most variance ($R^2 = .15$) in a measure of social/moral reasoning.

Eysenck's Theory of Conscience: Antisocial Behaviour and Moral Reasoning

The difficulties posed for public school programs by children and adolescents with problem behaviours have been widely discussed (Kamps & Tankersley, 1996; Maag & Howell, 1991; McMahon & Wells, 1998; Nelson, Center, Rutherford, & Walker, 1991; Nelson, Rutherford, Center, & Walker, 1991; Skiba, Peterson, & Williams, 1997; Sprague, & Walker, 2000; Vance, Fernandez, & Biber, 1998). Explanations for behavioural disabilities tend to focus largely upon social and cognitive factors (Bandura, 1973; Patterson, DeBaryshe, & Ramsey, 1989). However, there is growing interest in biological factors including temperament. Temperament, a biologically based trait, can be considered a risk factor that predisposes a child to development of problem behaviour (Chess & Thomas, 1987; Eysenck & Gudjonsson, 1989). Knowledge of temperament also has potential implications for planning and conducting interventions for behavioural disabilities (Center & Kemp, 2003; Chess & Thomas, 1986; Keogh, 2003; Wakefield, 1979).

A construct that is often used in explaining problem behaviour is morality. One of the pioneers in the study of moral development was Lawrence Kohlberg. Kohlberg (1964) defined morality as a set of cultural rules for social action that have been internalized by an individual. Kohlberg's theory assumes that the different rationales people employ in making moral judgments reflect differences in cognitive development and social understanding (Kohlberg, 1984).

Rothman (1980) conducted a review of studies that examined the relationship between moral reasoning and moral conduct. He concluded that there was a relationship between moral reasoning and conduct. The evidence, however, suggested that it was a

complex relationship affected by a number of factors. In general, the review indicated that individuals with a developmental deficit in moral reasoning were more likely to exhibit antisocial behaviour.

Eysenck (1976) acknowledged a Kohlbergian type of verbal explanation for morality as the internalization of social values and norms. However, Eysenck found such an explanation scientifically unsatisfying because it does not elucidate the mechanism through which the alleged internalization of "rules" takes place. Eysenck stated that the study of morality must begin by asking how to account for good behaviour rather than how to account for bad behaviour. Eysenck offered a hypothesis about good behaviour and the development of behavioural inhibitions based on his theory of personality.

Eysenck (1976) described conscience as a conditioned reflex acquired through respondent learning. Respondent learning takes place through the association of a neutral stimulus with a potent stimulus, which has the power to elicit a reflex response. This leads to a neutral stimulus acquiring eliciting power similar to the stimulus with which it was paired. Eysenck suggested that emotional conditioning, especially conditioned anxiety, was the basis for conscience. Thus, conscience can be thought of as negative conditioned emotional responses elicited by engaging in or by anticipating engaging in a prohibited behaviour. In such a case, the prohibited behaviour or its cognitive representation functions as a conditioned negative stimulus. For example, if a parent punishes a young child when the child goes out into the street, the street (neutral stimulus) comes to be associated with the punishment. The punishment probably elicits a complex response that includes pain, fear and escape behaviour. Once the conditioned inhibition has been established, the child will feel mounting anxiety as it approaches the

street and will turn away or avoid the street. Virtually, any child can acquire such conditioned inhibitions; however, Eysenck suggested that the ease of acquiring such inhibitions varies with temperament.

Eysenck (1976) proposed that good conduct is the result of socialization that establishes a system of conditioned inhibitions on behaviour. This will be referred to hereafter as his "morality hypothesis." More specifically, Eysenck's basic hypothesis was that individual differences in "moral" or "good" behaviour result, in part, from the interaction of two temperament traits: Extraversion (E), and Neuroticism (N). Persons high on E are less responsive than persons low on E to the conditioning of operant and respondent responses. A person high on the E trait has a low basal arousal level in the neocortex and does not acquire anxiety-based constraints on behaviour as easily as a person with a high level of arousal in the neocortex (low E). Persons high on N are more easily aroused emotionally and their arousal is more persistent in contrast to persons low on N. In short, high N adds an emotional character to behaviour, which often leads to an over reaction.

Center and Kemp (2002) conducted a meta-analysis of research examining Eysenck's personality theory in relation to antisocial behaviour in children and adolescents. All of the studies selected for inclusion in this analysis employed a contrast group. This meta-analysis found weak support for E with an average effect size of .20 when antisocial children were compared to controls. There was moderate support for N, with an average effect size of .43. Unfortunately, none of the individual studies in the meta-analysis examined the combination of the E and N traits. Most hypotheses derived from Eysenck's theory are stated in terms of effects from combinations of traits. To

properly test such hypotheses participants should be selected who match specific trait profiles and then are assessed for predicted outcomes rather than being selected for specific outcomes and then tested to determine if any of the expected personality traits are present. Thus, personality is more properly used as the independent variable and behaviour used as the dependent variable (Center, Jackson, & Kemp, 2005).

Jackson and Center (2002) evaluated Eysenck's (1976) morality hypothesis. The study divided participants into high, low, and mixed categories based on their being either high or low on both the E and N trait scores. Differences between the groups on self-reported externalizing conduct problems were tested. A statistically significant difference (p < .05) was found between the high and low groups on a measure of conduct behaviours. The low group reported significantly less problem behaviour, which supports Eysenck's hypothesis. However, the study was limited because of an unequal number of participants in the high (n = 37) and low (n = 11) groups and the size of the low group. There was also the possibility of a selection factor in the sample since all the participants were from a disciplinary setting. Finally, Center and Kemp (2002) found that the most potent Eysenckian trait in antisocial behaviour was Psychoticism (P), which was not controlled in the Jackson and Center study and may have contributed to the finding.

The results of research examining moral reasoning and problem behaviour are mixed. Five studies (Arbuthnot & Gordon, 1986; Bear, 1989; Bear & Richards, 1981; Campagna & Harter, 1975; Fodor, 1972) support the Kohlbergian hypothesis that less mature levels of moral reasoning (Stage 1 and 2) are associated with higher levels of problem behaviour. Five other studies (Bear & Rys, 1994; Hudgins & Prentice, 1973; McColgan, Rest, & Pruitt, 1983; Richards, Bear, Stewart, and Norman, 1992; Schonert-

Reichl, 1999) report results that are inconsistent with the Kohlbergian hypothesis. Thus,

the research is inconclusive.

There are a limited number of studies that examine the Eysenckian traits and

moral reasoning as conceptualized by Kohlberg as both relate to problem behaviour

(Aleixo & Norris, 2000; Furnham & Barratt, 1988). Furnham and Barratt (1988)

examined the relationship between moral reasoning and personality in three groups of

adolescents: delinquents, non-delinquent problem children, and a contrast group. The

participants completed the Defining Issues Test (DIT) (Rest, 1990), which is based on

Kohlberg's theory of moral development and the Junior Eysenck Personality

Questionnaire (JEPQ) (H. Eysenck & S. Eysenck, 1975). The results indicated no

significant difference between the three groups in moral judgment. The delinquents

scored significantly higher on the E trait than those in the problem behaviour group,

significantly higher on N than the contrast group, and higher on P than either of the other

two groups.

Aleixo and Norris (2000) examined personality and moral reasoning in convicted,

young male offenders (N = 101). The goal of the investigation was to examine delinquent

behaviour and moral reasoning in relation to the personality traits P, E, and N. The study

employed the short form of the EPQ-R to assess personality, the Sociomoral Reflection

Measure (SRM) (Gibbs & Widaman, 1982) to assess moral reasoning, and the Self-

Reported Delinquency Scale (SRD) (Elliot, Ageton, Huizinga, Knowles, & Canter, 1983)

to assess delinquent behaviours. The P and E traits had significant positive correlations

with delinquent behaviours. The E trait also had a significant correlation with moral

reasoning as measured by the SRM. There were no significant correlations with N trait scores.

The present study evaluated Eysenck's morality hypothesis by testing for differences in self-reported problem behaviour in participants grouped by their personality profile. The morality hypothesis predicts that those persons low on both the E and N traits will report more appropriate behaviour than those persons high on both traits. To test this hypothesis the P trait should be controlled to reduce the influence of this trait on the dependent measure. If data support the prediction, the presence of a better-developed system of behavioural inhibitions in persons low on both the E and N traits would be indirectly supported.

While not explicit in Eysenck's formulation concerning morality, it was further hypothesized that if the E and N traits affect learning and the acquisition of behavioural inhibitions, they should also affect other functions related to learning such as the development of social/moral reasoning. Therefore, this study also tested the possibility that differences in learning predicted for persons with different profiles on the E and N traits will be reflected in differences on a measure of social/moral reasoning as well.

<div align="center">Method</div>

Setting

The study was conducted in the second largest school system in the state of Georgia. This county school system serves approximately 93,000 students with approximately 14% of the total enrolment in special education. It is a relatively diverse school system as evident by the following ethnic break down of the students: Whites (66.08%), Black (22.35%), American Indians (.21%), Hispanic (5.96%), Asian (3.31%),

and Multi-racial (2.09%).   Three middle schools, three high schools and two alternative

schools in this school system were asked to participate. One school from each category

agreed to participate.

Participants

All students at the three schools were invited to participate in the study. Those

students who indicated an interest were provided with both a personal and parental

consent form. The consent form had previously been reviewed and approved by both the

school system and the university's institutional review board for the protection of human

subjects. A total of 458 students agreed to participate and returned signed consent forms.

Data were collected on the 458 participants. The Junior Eysenck Personality

Questionnaire (JEPQ) data were then evaluated to determine how many participants

would meet the two personality profiles needed for the study. To identify participants

with the desired personality profiles participants' scores were compared to composite

mean and standard deviation scores. First, a composite mean and standard deviation for

the JEPQ scales were developed using the norms for 11 to 15 year olds in the manual (H.

Eysenck & S. Eysenck, 1975). The composites were computed using statistical

procedures considered appropriate for aggregating such values (Hedges & Olkin, 1985).

The aggregates were computed for boys and for girls across the ages of 11

through 15. The aggregate mean was computed by multiplying the *n* value times the

mean value for each age group for boys and girls separately (e.g., 220 x 3.81 = 838.2).

These values were summed across age groups and divided by the sum of *n* across age

groups to obtain an aggregate mean for each gender. To obtain an aggregate *SD*, the

variance for each age level for each gender was computed by using SD^2. The value for

variance was then multiplied by *n-1* where *n* was the number of age groups. The resulting

values were summed across age groups and divided by the cumulative *n* minus the

number of groups. The square root of the resulting value provided the aggregate *SD*.   In

males the composite means and standard deviations for P were ($M = 4.42$, $SD = 3.11$), for

E ($M = 18.81$, $SD = 3.79$), and for N ($M = 10.18$, $SD = 5.0$). In females the composite

means and standard deviations for P were ($M = 2.48$, $SD = 2.16$), for E ($M = 18.41$, $SD =$

3.62), and for N ($M = 11.86$, $SD = 4.87$).

The participant pool was screened using a conditional test that identified

participants who, using separate criteria for gender, were above the composite mean for E

and N and were within the normal range of variation for P and conversely identified

participants who were below the composite mean for E and N and within the normal

range of variation for P. All participants who met the screening criteria were then sorted

by personality profile, gender and age. Finally, participants in the two personality profile

groups were matched by gender and by age. Where participants had to be eliminated to

produce a matched set of participants, they were removed randomly using a random

number generator to identify the participants to be eliminated. The final result was a

matched sample with two groups of 30 students matched for age and gender. Each group

was comprised of 18 males with an age range of 11-15 years with a mean age of 13 years

and 12 females with an age range of 11-15 and a mean age of 13 years and 3 months.

Instrumentation

Three instruments were administered to the participants: the Junior Eysenck

Personality Questionnaire (JEPQ) (H. Eysenck & S. Eysenck, 1975), the Externalizing

Scale of the Youth Self-Report (YSR) (Achenbach, 1991) and the Defining Issues Test

(DIT) (Rest, 1990). The JEPQ was used to assess personality, the Externalizing Scale of

the YSR to assess self-reported conduct problems and the DIT to assess social/moral

reasoning.

The JEPQ is a child version of the adult Eysenck Personality Questionnaire. It is

comprised of 81 items standardized on a sample of 3,387 children (1,751 males and 1,636

females). Ages of the sampled participants ranged from 7 through 15 years. The

questionnaire assesses the three personality traits (P, E, and N) used in Eysenck's theory

of personality and includes a Lie (L) scale score assessing a person's inclination to give

socially expected responses. Test-retest reliability scores on the P, E, N, and L scales

gathered over a one month period ranged from $r = .61$ to .79 for children age 12 through

14 years. Internal reliability is moderate to high, $r = .61$ to .85 (H. Eysenck & S. Eysenck,

1975). The JEPQ was originally standardized on a sample of children from England.

Middlebrooks and Wakefield (1987) conducted a study with a sample of students from

the United States. No statistically significant differences were found between the means

and standard deviation scores of American children and British children.

The YSR contains two broadband scales for problem behaviours: the

Externalizing Scale and the Internalizing Scale. Only the Externalizing Scale of the YSR,

which assesses the antisocial behaviours of interest in this study, was used. The

Externalizing Scale consists of 33 items directed at behaviours such as disrespect for

authority, bullying, fighting and lying. Students responded on a Likert scale ranging from

zero to two where two is the highest rating. Christenson (1992) reported that the YSR

was a highly reliable and valid instrument that used excellent standardization procedures.

The median test-retest reliability reported was $r = .81$. The YSR also can discriminate

between students with problem behaviours and those who do not have problem behaviours (Elliot & Busse, 1992).

The DIT is an instrument for assessing social/moral reasoning that is based on Kohlberg's developmental theory of moral development. While there are other instruments and interview techniques that are good measures of production competence, the DIT measures understanding at the level behind most decisions made by most people (Narvaez, 2002). The manually scored DIT provides scores for reasoning stages and a summary score labelled P for "principled morality." Hereafter, the P score will be referred to as the Pm score to avoid confusion with the P score from the JEPQ. The Pm summary score is the most frequently used score from the DIT for research purposes (Rest, 1990). The DIT can be administered in a six-story form or a shorter three-story form, which was used in this study. The Pm score from the short version is reported to correlate at $r = .91$ with the Pm score from the full version. Test-retest reliability for the Pm score from the short form of the DIT ranges from .58 to .77. The Cronbach Alpha for the Pm score from the short form is reported at .76 (Rest, 1990).

Validity of the DIT has been assessed in a variety of ways (Rest, Narvaez, Thoma, & Bebeau, 1999). The DIT has been shown to 1) differentiate among various age and education groups; 2) to measure developmental change over time; 3) to correlate significantly with measures of moral comprehension; 4) to reflect change following moral education interventions; 5) to correlate significantly with political attitudes and choices; and finally 6) to correlate significantly with prosocial behaviour and decision-making. A correlation was computed between the DIT and YSR scores obtained from the participants in this study ($r = .01$), which was not significant.

Procedure

The three instruments were administered to students in small groups the size of which depended on the number of students participating in a given classroom. Data collection was not conducted on a fixed schedule but was done whenever it least interfered with participants' program of study. Instruments were read aloud to the students to compensate for possible differences in reading skill. The administration time for the three instruments was approximately 40-55 minutes. The instruments were administered in three counterbalanced sequences to control for sequence effects. Data collection was done by either the principal investigator or trained assistants. The assistants were trained on administration procedures and evaluated using an observational checklist. The criterion for successful training was 100% accuracy in following the specified procedures.

If there was an interruption in the administration of the instrument (e.g., an announcement over the PA system or an unexpected visitor whose presence required testing to stop), the students were instructed to turn their instrument face down in front of them until testing could be resumed. Participants were encouraged to ask a question if they did not understand something. The most frequent questions were about vocabulary (e.g., meaning of rubbish). All replies to questions were public and accessible to the other participants. Vocabulary questions were answered with a dictionary definition of the word. Discussion of items was not permitted. When questions arose about the meaning or intent of an item, the participants were instructed to use their best judgment.

Design

A two-group quasi-experimental design was used where the two groups represented two different combinations of scores on the E and N traits. Specifically, participants were grouped into the following combinations. There was a low E and low N group where low was defined as a score below the mean for each trait score. There was a high E and high N group where high was defined as a score above the mean for each trait score. Since the prediction being tested was based on the combination of E and N when both were either high or low, the P score also had to be within the normal range of variation for a participant to meet the criteria for inclusion in one of the groups. The groups resulting from the selection criteria were assessed statistically to ensure that the criteria had produced groups statistically different on the E and N traits and not statistically different from one another on the P trait. Thus the independent variable, personality profile, was fixed with two levels (high and low).

<div align="center">Results</div>

Statistical Findings

The first analysis conducted was a test to determine if the formation of the two groups for the study had the required characteristics. An ANOVA was run in which the three trait scores were tested for significant differences between the two groups. The results of that analysis confirmed that there was no statistically significant difference between the two groups on P. There was a statistically significant difference between the groups on E (F (1, 59) = 124.174, $p < .001$) and on N (F (1, 59) = 118.624, $p < .001$). Thus, the personality profiles needed for the two groups were achieved.

An ANOVA was also used to test for differences between the two levels of the independent variable (high E and high N versus low E and low N) for the two dependent

variables: problem behaviour and social/moral reasoning (see Table 1). The study

hypothesized that there would be a significant difference in self-reported problem

behaviour between participants low on both the E and N traits and participants high on

both the E and N traits. The test of the first hypothesis yielded a statistically significant

difference (F (1, 59) = 6.836, $p < .01$). The low group had a significantly lower mean

score on the YSR ($M = 13.73$, $SD = 6.51$) than the high group ($M = 18.47$, $SD = 7.48$).

The standardized effect size (ES) for the YSR was moderately high (Cohen, 1988) ($ES =$

.67). The test of the second hypothesis also yielded a statistically significant difference (F

(1, 59) = 7.176, $p < .01$). The low group had a significantly higher mean Pm score on the

DIT ($M = 23.89$, $SD = 12.75$) than the high group ($M = 16.11$, $SD = 9.51$). The

standardized ES for the DIT was high ($ES = .89$).

Insert Table 1 about Here

Finally, separate backward regression analyses were run against both dependent

variables using E, N and the interaction of E and N (E x N) as the independent variables

to determine which variables best predicted the YSR and DIT scores. The regression for

the YSR yielded a model that was significant ($F = 12.33$ (1, 59), $p < .001$). The adjusted

R^2 for this model was .16. The one variable retained in the model was the interaction term

EN. The standardized Beta for EN was .42. The regression for the DIT yielded a model

that was significant ($F = 11.7$ (1, 59), $p < .001$). The adjusted R^2 for this model was .15.

The one variable retained in the model was E. The standardized Beta for E was .41.

Discussion

The first hypothesis in this study evaluated Eysenck's basic morality hypothesis in which he predicted that individuals with low trait scores on both the E and N scales would more easily acquire behavioural inhibitions and would therefore have lower levels of problem behaviour. The data analysis supported the prediction that low E and N participants would report lower levels of problem behaviours on the YSR. This finding supported Eysenck's morality hypothesis and provides indirect support for a better-developed system of behavioural inhibitions or conscience in those participants. The finding also confirms the results in an earlier study (Jackson & Center, 2002), which used smaller, unmatched samples in which there was no attempt to control for the effect of the P trait. The finding for differences in problem behaviour is consistent with many earlier studies evaluated by Center & Kemp (2002) and a recent study (Center, Jackson, & Kemp, 2005).

The second hypothesis tested was a prediction by the investigators that there would be a significant difference between high E and N and low E and N groups on a measure of social/moral reasoning. Participants with low E and N trait scores had a significantly higher mean Pm score on the DIT. Thus, the predicted difference was confirmed. This finding suggests that the reasoning assessed by the DIT is probably influenced, at least in part, by learning mediated by consequences.

There have only been a few prior studies that have tested for a relationship between moral reasoning and Eysenckian traits. The present finding is counter to the finding in Furnham and Barratt (1988) that found no difference between their groups in moral reasoning. Aleixo and Norris (2000) found a significant correlational between

moral reasoning and personality in delinquents. Their participants' P and E scores were both significantly correlated with conviction behaviours.

The findings for the regression analyses are consistent with what would be expected. The best regression model for predicting the YSR used only the interaction of E and N. Theory predicts that inhibitions for problem behaviours will be more likely to be weaker in individuals high on E and individuals high on N will also be more easily aroused to action and their behaviour will be more intense and have greater duration than would typically be the case. Thus, finding of better behaviour would be expected in participants low on both E and N, which was what the participants in this study reported.

Further, the best regression model for predicting the Pm score on the DIT used only E. This is consistent with the prediction that a developmental trait like social/moral reasoning should be affected by a factor with general effects on learning. As measured by the DIT, participants low on E had better developed social/moral reasoning abilities than those high on E. While both regression analyses were significant at the .001 level, the amount of variance accounted for by the regression was low with adjusted R Squares of .15 and .16.

Center, Jackson, & Kemp (2005) evaluated the combined effects of P, E, N and L on behaviour as assessed by the YSR and found that differences between groups dichotomous on these traits produced and effect size of 2.45, which is considered very large (Cohen, 1988). The best model from the regression analysis in that study found the largest amount of variance accounted for by the interaction of P and E along with L. The adjusted R^2 for this model was .670. Clearly, significant contributions to problem behaviour were being made by the P trait, which was controlled in the present study,

along with the L score, which is generally taken as an indicator for degree of socialization. Due to the powerful effects associated with P (Center & Kemp, 2002; Center, Jackson, & Kemp, 2005), the effect of P, especially in relation to social/moral reasoning, needs to be evaluated.

The present study was only able to grossly control for cognitive development by matching participants by age and gender, both of which have some relationship to cognitive development. Mental age or achievement levels would have been employed in this study had the data been available to the researchers, but access was not permitted. Future studies examining social/moral reasoning should attempt to better control for cognitive development.

The sample used in this study was not randomly selected. Further the sample was selected to meet specific criteria chosen to achieve a test of the morality hypothesis with as few confounds as possible. Thus, the generalizability of the results is limited to the characteristics of the participants.

There may be limitations related to the use of composite means and standard deviation scores as criteria for selecting participants and assigning participants to groups. Use of age specific means and standard deviation scores might result in a somewhat different sample composition that could affect the outcome. However, the logistics of producing an adequate sample using age specific means and standard deviations make for a very difficult task.

The tests used to operationalize the variables in this study were selected on the basis of their good psychometric properties. However, participants have different attitudes toward tests and different motivations when taking tests that can affect the

accuracy of the responses obtained. Tests, especially of such constructs as personality and social/moral reasoning have imperfections and are, at best, only approximate measures of the constructs they purport to measure.

Additional studies are needed to confirm the findings in this investigation. It is important that future studies employ personality profile as the independent variable rather than as a dependent variable. Eysenck's hypotheses clearly postulate personality as a facilitating variable (Eysenck, 1997b). His traits are constructs that provide a conceptual interface between the distal and proximal antecedents for behaviour and outcomes or proximal and distal consequences. Both social/moral reasoning and conduct behaviour should probably be classified as distal consequences. Thus, the traits, as mediating constructs between antecedents and consequences, should be used as independent variables, not distal consequences as has been the case in most studies. Additionally, Eysenck's hypotheses (1976, 1997a) are usually phrased in terms of the interaction of traits rather than in terms of the actions of single traits. When trait scores are used as dependent variables the interactive effects are not being assessed. Only by using trait combinations as the basis for independent variables can the interactive effect of the traits on such outcomes as conduct or social/moral reasoning be properly evaluated.

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Table 1

ANOVA summary table of problem behavior and moral reasoning across high and low

groups of E and N traits

Source	Sum of Squares	df	Mean Square	F
YSR				
Between Groups	336.067	1	336.067	6.836*
Within Groups	2851.333	58	49.161	
Total	3187.400	59		
DIT Pd				
Between Groups	907.148	1	907.148	7.176*
Within Groups	7331.782	58	126.410	
Total	8238.930	59		

* $p < .01$