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Inhibition of Antisocial Behavior and Eysenck's Theory of Conscience

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Abstract

Hans Eysenck's hypothesis about the acquisition of behavioral inhibitions was evaluated. The hypothesis suggests that what is often described as morality or conscience is acquired through learning experiences to which individuals respond differently according to their temperament-based personality traits. Eysenck's theory of personality has three temperament-based traits: Psychoticism (P), Extraversion (E), and Neuroticism (N). He suggests that individuals who are low on both the E and N traits are more likely to acquire behavioral inhibitions than individuals who are high on both traits. The study employed 84 participants of whom 75% were between 12 and 14 years of age. The participants were placed in one of three categories (high, low or mixed) based on their E and N trait scores. Differences between the groups on self-reported externalizing conduct problems were examined. Some support for the hypothesis was found. Participants who scored low on the E, and N traits scored significantly lower on self-reported behavior problems than those scoring high on the two traits. The authors discuss the results, limitations of the study, and suggestions for future research.

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The challenge of providing public school programs for children and adolescents with antisocial behavior have been widely discussed (Maag & Howell, 1991; Nelson, Center, Rutherford, & Walker, 1991; Nelson, Rutherford, Center, & Walker, 1991). While their problems are many and varied, students with antisocial behavior have been generally described as "repetitive and persistent" violators of rules and of the rights of others and as exhibiting " . . . a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior. . . " (American Psychiatric Association, 1994, p. 91). The problem of antisocial behavior in students is a complex one with no certain solution in sight. There are many factors that contribute to the development of conduct problems (McMahon & Wells, 1998; Sprague &

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Walker, 2000). Explanations for antisocial behavior that focus largely upon social and cognitive factors (e.g., Bandura, 1973; Patterson, Reid, & Dishion, 1992) have received a great deal of attention. However, there is growing interest in biological factors including temperament (Chess & Thomas, 1987), hormonal factors (Dabbs, 1996) and stress response disorder (Niehoff, 1999).

Eysenck (1976) offered an explanation for the development of antisocial behavior rooted in biological factors, which he characterized as temperament. He proposed that what psychologists call personality is the result of the interaction of temperament and social experience. Eysenck's hypothesis was that behavioral inhibition or what is popularly referred to as conscience is acquired through a conditioning paradigm. An individual's response to social experiences that hold the potential for conditioning behavioral inhibitions varies according to temperament-based personality characteristics. In other words, some people have a temperament that makes them either more or less sensitive to experiences that could potentially lead to a behavioral inhibition and therefore more or less easily socialized.

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 the neutral stimulus acquiring eliciting power similar to the stimulus with which it was paired. One such class of reflex responses is emotion. Eysenck suggested that emotional responses are 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 behavior. In such a case, the prohibited behavior or its cognitive representation functions as a conditioned negative stimulus. For example, if a parent punishes a young child when it 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 behavior. 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 suggests that the ease of acquiring such inhibitions varies with temperament.

Eysenck (1976) suggested that many antisocial behaviors are probably reinforcing in a way that is immediately satisfying to the individual performing them. Thus, such behavior functions as an antecedent for reinforcement, which in turn maintains the behavior. If an antisocial behavior is consistently associated with punishment, the behavior becomes a conditioned negative stimulus for a conditioned negative emotional response, e.g., anxiety about a possible punishment. Thus, anxiety about possible punishment leads to the inhibition of the behavior. In this manner a behavior that initially functioned as an operant antecedent for reinforcement

is counter conditioned to function as a respondent antecedent for anxiety. A system of such behavioral inhibitions is what Eysenck described as conscience.

Eysenck (1976) thought that good conduct could be the result of socialization that establishes a system of conditioned inhibitions on behavior. Eysenck's hypothesis was that individual differences in susceptibility to conditioning result 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 behavior as easily as a person with a high level of arousal in the neocortex (low E). According to Eysenck the biological basis for E resides in the Ascending Reticular Activating System (ARAS). This system governs the functioning of the cortex, specifically the neocortex, and its response to incoming stimuli. One function of the cortex is to inhibit the activities of the lower brain centers. Thus, a highly aroused cortex more easily inhibits behavior. Because of their high basal level of cortical arousal, introverts (low E) are more likely to acquire effective emotional inhibitions on their behaviors than are extraverts (high E).

High N is associated with ease of emotional arousability, which increases the difficulty of inhibiting behavior (Eysenck, 1976, 1997). Eysenck proposed that differences in the N trait are controlled by the autonomic nervous system, specifically visceral brain activation (VBA), which is coordinated by the hypothalamus and limbic system. A person low on the N trait reacts slowly and moderately to most emotional stimuli and ceases reacting when the stimuli are withdrawn. Conversely, a person high on the N trait is quickly and easily aroused emotionally and the arousal is more persistent, which makes inhibition of behavior more difficult. Thus, Eysenck hypothesized that individuals who are low to average on both the E and N traits will be more likely to acquire an effective system of inhibitions or conscience because they acquire conditioning more easily and can more easily inhibit response impulses.

Center and Kemp (in press, a) conducted a meta-analysis of research examining Eysenck's personality theory in relation to antisocial behavior 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 when antisocial children were compared to controls. Unfortunately, none of individual studies in the meta-analysis examined the interaction of the E and N traits. There have been a few classification studies employing cluster analysis that have found an association between trait scores in subjects with and without behavior problems (Aleixo & Norris,

2000; McEwan, 1983; McEwan & Knowles, 1984; McGurk & McDougal, 1981). All of these studies defined behavior problems by participants' adjudication status. Three of these studies found an association between the E and N traits taken together relative to antisocial behavior and one did not.

Eysenck predicted that, on the whole, those low on both E and N would exhibit better behavior than those high on the two traits. The purpose of this study was to determine if individuals who are low on both the E and N traits report better behavior than a contrast group that is high on both traits. If participants that are low on both E and N report significantly better behavior, the stronger system of conditioned inhibitions predicted to be present in such individuals would be indirectly supported.

Method

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 13,000 of the total enrollment 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%). The study was conducted in a transitional learning center that serves the southern part of the county. A transitional learning center is an alternative education option for students suspended from their home schools. Approximately 21% of the high school and 41% of the middle school students in the population served by the transitional learning center qualified for free/reduced lunch according to the United State's Federal Government guidelines.

Subjects

All participants in the study were suspended from school for disciplinary reasons and attended the transitional learning center as an alternative to an out-of-school suspension. Students attending the center have the following characteristics. Thirty-five percent were suspended for fighting, 9% for threatening, 3% for theft, 3% for drugs and alcohol, 2% for possession of weapons and 37% for other unspecified discipline problems. The average stay in the center is five days and the average age of the students sent to the center is 13 years.

During the data collection period, 120 students attended the transition center and 84% agreed to participate in the study. Written consent to participate in the study was obtained from both parents and students. Partici-

pants in the study (n = 98) were 77% male and 21% female. Fifty-one percent were African American; 28% were White; 10% were Hispanic; and 11% were Multi-Racial. Twenty-four percent of the participants were in the sixth grade; 23% were in the seventh grade; 28% were in the eighth grade; 11% were in the ninth grade; 9% were in the tenth grade; 2.5% were in the eleventh grade; and 3% were in the twelfth grade. The age range of the participants was 11 years through 18 years of age with a modal age of 14 years. Seventy-five percent of the students were 14 or younger. Eighty-three percent of the participants were from regular education placements and 17% were from special education placements. The final sample was reduced to n = 84 by eliminating all participants who scored more than one standard deviation above the mean on the Lie Scale in the Junior Eysenck Personality Questionnaire's standardization norms. The purpose of the lie scale is to identify responders who may be giving untruthful responses to items. The higher a participant's score on this scale the more likely they are to be giving untruthful responses.

Instrumentation

Two instruments were administered to the participants: the Junior Eysenck Personality Questionnaire (JEPQ) (H. Eysenck & S. Eysenck, 1975) and the Externalizing Scale of the Youth Self-Report (YSR) (Achenbach, 1991). The JEPQ was used to assess personality. The Externalizing Scale of the YSR was used to assess self-reported conduct problems.

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, N, E, 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. Middlebrook 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 behaviors: the Externalizing Scale and the Internalizing Scale. Only the Externalizing Scale of the YSR, which assesses the antisocial behaviors of interest in this study, was used. The Externalizing Scale consists of 33 items directed at behaviors 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 behaviors and those who do not have problem behaviors (Elliot & Busse, 1992).

Procedure

The two questionnaires were administered to students either individually or in small groups depending on the number of students entering the suspension unit on a daily basis. Questionnaires were not administered on a fixed schedule but administered whenever doing so least interfered with a participant's program of study. Questionnaires were read to the students individually or in small groups of two to five students. The administration of the questionnaires lasted approximately 20-45 minutes. If there was an interruption in the administration of the questionnaires (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 questionnaires face down in front of them until testing could be resumed. If the interruption was longer than five minutes, questionnaires were collected and then redistributed following the interruption (e.g., a fire drill). The sequence of questionnaire presentation was counterbalanced with approximately half of the students being given the JEPQ followed by the YSR and the other half being given the YSR followed by the JEPQ.

One of the investigators administered all assessment instruments. Participants were encouraged to ask questions if they did not understand something. This was necessary because the JEPQ contained some vocabulary that might not be familiar to the students (e.g., rubbish). The investigator recorded responses given to participants' questions. If another participant asked a question previously asked, the same response given to the first participant was given to the second participant. This only happened a few times and was limited to questions about the meaning of a word.

Design

A three-group quasi-experimental design was used where the three groups represented three 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 below the means for both trait scores. There was a high E and high N group where high was defined as above the mean for both trait scores. Since the prediction being tested was based on the interaction of E and N when both were either high or low, two groups were formed from those above the

mean on both traits and those below the mean on both traits. All participants who did not meet the criteria for one of these two groups went into a third mixed group (e.g., high E and low N or high N and low E). Thus, there was a fixed factor with three levels (high, low and mixed).

Results

A One-way ANOVA employing a Sheffe for post hoc analysis was used to test for differences on the dependent variable (YSR scores) between the levels of the independent variable. To test Eysenck's hypothesis about behavioral inhibition, the investigators predicted that students low on both the E and N traits would have lower scores on the Externalizing Scale of the YSR than those high on both traits. This hypothesis was supported ($F = 4.448, p < .015$). The post hoc analysis indicated a significant difference ($p < .047$) where the low group ($n = 11$) was significantly lower ($M = 15.455$) than the high group ($n = 37$) ($M = 21.892$) on the YSR.

One additional source of support for the hypothesis from this data is the proportion of participants falling into either the low E and N or high E and N groups. Given that the sample is from a group of participants whose placement demonstrates some type of discipline problem, one would expect that there would be far fewer low E and N participants than high E and N participants, if Eysenck's hypothesis is valid. This expectation was confirmed. The low E and N participants comprised only 13% of the sample while the high E and N participants comprised 44% of the sample. The investigators conducted a Chi Square Test on the frequency of participants observed in each of the three categories with an assumption of equal distribution (Chi Square = 15.5, $p < .000$), which confirmed that there was a statistically significant difference between the groups.

Discussion

The purpose of the study was to test Eysenck's hypothesis about the development of behavioral inhibitions or conscience. The investigators predicted that participants with low E and low N trait scores would report less problem behavior than participants high on both traits. The results of this study support Eysenck's hypothesis that his E and N traits, in combination, are related to the acquisition of behavioral inhibitions.

H. Eysenck (1976) stated that the E trait is comprised of several subtraits such as those described by S. Eysenck (1981) including sociability, impulsivity and optimism or venturesomeness. He proposed that the link between the E trait and the acquisition of behavioral inhibitions may be more strongly related to one of these sub-traits than to the others or the E trait overall. It would be useful for future research to examine the sub-trait structure of E and the strength of relationship between any such sub-traits

and problems behavior.

Further, the concept of morality has been a construct of long standing interest to psychologists (Erikson, 1964; Hogan, 1975; Kohlberg, 1964, 1969; Likona, 1991; Piaget, 1935; Robins, 1978). Kohlberg (1964) defined morality as a set of cultural rules for social action that have been internalized by an individual. Similarly, Eysenck (1976) defined morality as the internalization of social values and norms. In both cases, one might equate internalization of social rules with the acquisition of behavioral inhibitions. Moral reasoning is usually viewed as a cognitive-developmental process, which is dependent upon both maturation factors and experiential factors (Kohlberg, 1964; Likona, 1991; Piaget, 1935). The primary area of overlap in the development of conscience, as discussed in this paper, and of moral reasoning is related to the experiential factor. Thus, one could hypothesize a relationship between Eysenck's E and N traits and the level of moral reasoning achieved by children and adolescents, since these temperament traits appear to affect learning from experience. A study that will include moral reasoning as a dependent variable is in the planning stage. The new study will assess moral reasoning using the Defining Issues Test (Rest, Narvaez, & Thoma, 1999), which is based on the theoretical model of Kohlberg (1964, 1969).

The current study had several limitations. The study was limited by the use of an intact sample of students who were in an alternative class for students with a wide range of discipline problems. The study was also limited by the size of the sub-samples, especially the low E and N sample (n = 11). The power of statistical tests is greater when the size of the contrasted samples is large, i.e., smaller differences between samples will yield statistical significance. Unfortunately, a hypothesis related to combined, directional scores makes large samples of qualifying participants difficult to achieve. For example, assuming normal distribution of the traits, the probability of obtaining a plus one S.D. score or greater on one of the traits is approximately 16 out of 100 or 4 out of 25. The probability of obtaining a plus one S.D. score on two traits is 4/25 times 4/25 or 4/625, which is approximately 1 out of 156. Thus, randomly testing children, one would need to test about 4700 children to obtain a sample of 30 children who are plus one S.D. or above on both the E and N traits. Subsequent studies should attempt to increase sample size and possibly the degree of spread in trait scores for contrast groups. It seems unlikely given the probabilities that a large sample could be obtained where both groups contain participants who fall outside the normal range of variation, but it should be possible to employ a stricter criterion than the mean.

In conclusion, information on the susceptibility of children to the acquisition of behavioral inhibitions has the potential of being useful to parents, teachers and other socialization agents. Wakefield (1976) has delineated the major implications for Eysenck's theory for educational settings, in-

cluding implications for both instruction and behavior management. His discussion of the application of the theory to educational problems provides a rich source of potential research hypotheses. Center and Kemp (in press, b) have discussed the implications of the theory for the development and treatment of conduct disorders in children and youth. If the hypothesis examined in this study were conclusively validated by further research, it would lay a foundation for intervention research to identify the most effective methods for establishing behavioral inhibitions in children, especially those who do not acquire such conditioning easily.

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