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ABSTRACT

This paper discusses the outcomes of a study that examined Hans Eysenck's antisocial behavioral hypothesis (ASB). Eysenck's theory of personality has three temperament-based traits: Psychoticism (P), Extraversion (E), and Neuroticism (N). His ASB hypothesis predicts that individuals high on P, E, and N with poor socialization are at the greatest risk for the development of serious conduct problems. The study evaluated Eysenck's ASB hypothesis in 75 students receiving services for emotional/behavioral disorders (E/BD) and 75 general education students matched for age, ethnicity, and sex. Participants were enrolled in middle and high schools in five counties in a large Southeastern state. Participants were administered three questionnaires: the Junior Eysenck Personality Questionnaire, the Basic Adlerian Scales for Interpersonal Success (BASIS), and the externalizing scale of the Youth Self-Report (YSR). Participants were compared based on educational placement and by the seriousness of self-reported behavioral problems. Students with E/BD were significantly higher on the N scale and lower on the E scale in comparison to their general education peers, indicating greater risk for emotional disorders. Their assessment also suggested greater socialization difficulties than the general education participants. Appendices include data charts. (Contains 46 references.) (CR)

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Running head: TEMPERAMENT AND BEHAVIOR

Temperament Based Personality, Socialization, and Behavior in Students with Emotional/Behavioral Disorders and General Education Students

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Abstract

Consideration of biological factors, such as temperament, on the development of conduct problems has typically been given little attention. Eysenck, a British psychologist, has developed an extensive and well-researched model of personality consisting of three independent temperament traits; Psychoticism (P), Extroversion (E), and Neuroticism (N). Eysenck views personality as the interaction of these traits with socialization. Eysenck's antisocial behavioral hypothesis (ASB) predicts that individuals high on P, E, and N with poor socialization are at the greatest risk for the development of serious conduct problems. This study evaluated Eysenck's ASB (antisocial behavior) hypothesis in students receiving services in Emotional/Behavioral Disorders (E/BD) (n = 75) and general education students (n = 75) matched for age, ethnicity, and sex. Participants were enrolled in middle and high schools in five counties in a large Southeastern state in the United States. Participants were administered three questionnaires; the Junior Eysenck Personality Questionnaire, the Basic Adlerian Scales for Interpersonal Success (BASIS), and the externalizing scale of the Youth Self-Report (YSR). Participants were compared based on educational placement and by the seriousness of self-reported behavior problems. Students with E/BD were significantly higher on the N scale and lower on the E scale in comparison to their general education peers indicating greater risk for emotional disorders. Their assessment also suggested greater socialization difficulties than the general education participants. Elevated P and N scores were found in students reporting serious levels of conduct problems on the YSR in comparison to those reporting average difficulties. Students reporting serious levels of conduct problems also reported poor early socialization experiences as assessed by the BASIS.

Temperament Based Personality, Socialization, and Behavior in Students with Emotional/Behavioral Disorders and General Education Students

Conduct problems in the public schools are a major concern for educators. The difficulties posed for public school programs by children and adolescents with conduct problems have been widely debated (e.g., Maag & Howell, 1991; Nelson, Center, Rutherford, & Walker, 1991). Many students with conduct problems have been described as "repetitive and persistent" violators of rules and of the rights of others. They exhibit, " a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior" (APA, 1994, p. 91). In fact, conduct problems are one of the most common reasons for students being placed in special education (Kauffman, 1997). Unfortunately, the majority of intervention strategies for children and adolescents with conduct problems have met with dismal failure (McMahon & Wells, 1998). The complex nature of conduct problems may be one reason for such failure. Social, cognitive, and biological factors are involved in the development of conduct problems (McMahon & Wells, 1998; Niehoff, 1999; Sprague & Walker, 2000). Effective treatment for conduct problems requires a careful consideration of all of these factors.

The possible role of biological factors, such as temperament, in the development of conduct disorders has not received adequate research attention. Temperament is a biologically based trait that in some cases is a risk factor predisposing individuals toward the development of conduct problems. Hans Eysenck, a British psychologist, has a well-researched biosocial theory of personality that includes the role of temperament in the development of conduct problems (Eysenck, 1977, 1997). In Eysenck's model, personality is the product of an interaction between

temperament and social experience. The research support for the model has a long and continuous history (Eysenck, 1947, 1967, 1981, 1991a, 1991b, 1995; H. J. Eysenck & M. W. Eysenck, 1985). Eysenck's model also has a clearly articulated hypothesis concerning the development of conduct problems in children and adolescents (Eysenck & Gudjonsson, 1989).

Eysenck's Personality Theory

Eysenck's theoretical model is based on the interaction of three temperament-based, personality traits interacting with socialization experiences and general intelligence (Eysenck, 1997). Each of the temperament based personality traits is on a continuum ranging from low to high. The temperament based personality traits are also characterized by independence from each other. An individual may be high on some traits and low or average on others (Eysenck, 1997). Eysenck has labeled the traits, Psychoticism (P), Extroversion (E), and Neuroticism (N). Psychoticism is hypothesized to be a polygenic trait with potential contributions from both small and large effect genes. An individual inheriting numerous small effect genes without large effect genes may be predisposed toward the development of aggressive and antisocial behavior. The inheritance of large effect genes contributing to P is related to an additional predisposition toward the development of psychotic disorders (H. J. Eysenck & S. B. G. Eysenck, 1976). Many high P individuals can be characterized as lacking empathy and exhibiting cruel behavior in relation to others. Altruistic behavior and empathy often characterize the low P individual.

The E trait is, among other things, related to impulse control. Impulse control in turn is linked to the basal arousal level in an individual's neocortex, which is mediated by the ascending reticular activating system (ARAS). Under arousal of the neocortex is associated with a weak response to conditioning. Under responsiveness to conditioning appears to result in weak inhibition and impulsive behaviors (Eysenck, 1967). The weak response to conditioning in high

E individuals may also result in a poorly developed conscience and weak rule-governed behavior (Eysenck, 1997).

The N trait is related to emotionality and how susceptible one is to arousal of the autonomic nervous system, (i.e., differences in responsiveness to visceral brain activation [VBA]) (Eysenck, 1977). Mediation of the VBA is through the hypothalamus and limbic system. High levels of arousal, high N, lead to emotionally over reactive and unstable behavior. Individuals with high N are particularly susceptible to respondent conditioning and the acquisition of phobias. Low N is related to emotional stability and controlled behavior (Eysenck, 1967).

Eysenck's (1977, 1997) antisocial behavior hypothesis (ASB) predicts that individuals high on the P, E, and N traits are at the greatest risk for the development of conduct problems. The risk of developing serious behavioral problems is exacerbated by poor socialization as well as below average intelligence (g) associated with low academic achievement. The P trait is primarily implicated in the development of conduct problems; elevations on the E and N traits are secondary. Eysenck (1997) has also suggested that high E has a greater influence than high N in adolescent antisocial behavior. Elevated N is suggested to be more influential than high E in adult antisocial behavior. However, research results have been somewhat ambiguous regarding the role of high N in adolescent antisocial behavior (e.g., Fonseca & Yule, 1995; Jamison, 1980; Lane, 1987).

The Eysenck Personality Questionnaire (H. J. Eysenck & S. B. G. Eysenck, 1975, 1993) measures the P, E, and N traits and includes a Lie (L) scale. The L scale was initially intended as a dissimulation measure; however, L is currently viewed as a measure of social conformity. Low L scale scores are taken as an indication that an individual is indifferent to social expectations

and is not well socialized. Individuals exhibiting elevated P, E, and N scores and having conduct problems would be expected to also have a low L score. Low L scores serve as confirmation of the antisocial personality profile hypothesized by Eysenck.

Review of Related Literature

An extensive review of research bearing on Eysenck's high P, E, N, and low L personality profile for the development of conduct problems provided significant support for Eysenck's ASB hypothesis (Kemp & Center, 2000a). An evaluation of 20 studies indicated that adolescents and children with conduct problems were far more likely to have the elevated P, E, N and low L profile than adolescents and children without conduct problems. The samples in these studies were largely composed of school children or adjudicated adolescents. There was, however, somewhat stronger support for elevated P and E than elevated N. The strongest support for Eysenck's ASB hypothesis was found for the P trait, with 90% of reviewed studies supporting elevated P in individuals with conduct problems. Elevation on E was found in 58% of the studies and elevation on N in 41% of the studies. Finally, depressed L was associated with conduct problems in 87% of the studies.

Research demonstrates support for elevated P, E, and N and low L in individuals with conduct problems. However, a notable deficit in the literature exists regarding the interaction of poor socialization with high P, E, and N in the development of conduct problems as hypothesized by Eysenck. Further, no studies have evaluated Eysenck's ASB hypothesis in children receiving services specifically for Emotional/Behavioral Disorders (E/BD) in the United States. The majority of special education placements are due to conduct problems according to Kauffman (1997). Children and adolescents identified as having E/BD would appear more likely to have the ASB profile than their general education peers would. The personality profiles of students

with E/BD and students in general education have not been compared in any study with adequate sample size to determine if any differences exist. Research has generally failed to control for differences in personality profiles that may be attributable to age, sex, and ethnicity (e.g., Farrell, 1992). Research targeting children in special education has generally failed to specifically indicate the children's category of service (e.g. Porrata, 1991, 1997) or has encompassed rather extreme groups, such as residentially placed children (e.g., Farrell, 1992).

Porrata (1991, 1997) has evaluated the personality profiles of special education students in Puerto Rico using a modified version of the Junior Eysenck Personality Questionnaire (JEPQ). Porrata's studies compared the P, E, N, and L scores of special education students with an average age of 14 years (Porratta, 1991) and 15 years (Porratta, 1997) with the scores of their general education peers. Special education representation in both studies was small with fewer than 25 students in either study. The special education students were described as social misfits or learning disabled in both studies and no mention of a categorical placement such as E/BD was made. Special education participants were not matched for ethnicity with general education participants. Special education participants in the 1991 study were all male. There was no description of the sex of the participants in the 1997 study.

Porrata's (1997) results indicated significant differences ($p < .05$) between the special and general education students on all Eysenck scales with t test results ranging from - 3.95 for the L scale to - 1.72 for the N scale. Special education students were higher than general education students on the P, N, and L scales and lower on the E scale. Porrata (1991) found a significant difference ($p < .05$) between general and special education students on the E scale. General education students were higher on E ($M = 15.22$, $SD = 3.24$) than the special education students ($M = 13.88$, $SD = 3.82$).

Farrell (1992) assessed the personality profiles of 100 children and adolescents in four residential schools for emotionally and behaviorally disturbed children in England. He compared their personality profiles to the norms for the JEPQ in the EPQ Manual (H. J. Eysenck & S. B. G. Eysenck, 1975). The participants in his study were between the ages of 9 and 16. The results indicated that the residential students were higher on the P scale ($M = 7.16$, $SD = 4.187$), higher on the N scale ($M = 12.06$, $SD = 4.29$), and lower on the E scale ($M = 17.89$, $SD = 4.037$). There were no results reported for the L scale.

One of the purposes of the present study was to examine the interaction of socialization with the P, E, and N traits in the development of conduct problems. Studies of the ASB hypothesis have not usually employed socialization as a dependent variable other than through the analysis of L scale scores. However, Kemp and Center (2000b) did evaluate both temperament-based personality traits and socialization experiences in a sample of young adult parolees. The study found strong support for the ASB hypothesis. The two principal goals for this study were to determine (a) if differences in personality and socialization were present between general education students and students with E/BD, and (b) if there were differences in personality and socialization in the sample by level of self-reported antisocial behavior

Method

Participants and Setting

Participants were solicited from middle and high schools in urban, suburban, and rural school systems in five counties in a large southeastern state. Participants were also solicited from separate special day schools that served students with severe emotional problems. A contact person or persons, such as a special education teacher or administrator, was established at each participating school. The contact person solicited the participation of all students aged 11

and above receiving services in the E/BD program at the school. Participants were initially solicited through a letter from the researcher requesting participation. The initial solicitation was followed by the use of incentives for participation such as ice cream coupons and pizza parties in an effort to include non-volunteers in the sample. All participants were provided the participation incentives. General education participants in the same age range as the participants with E/BD were then solicited. A larger number of general education participants (n =120) agreed to take part in the study than participants with E/BD (n = 75). Seventy-five of the prospective general education participants matching the participants with E/BD on the variables of age, sex, and race were selected for inclusion in the study. When more than one general education student matched an E/BD student, the general education student used was randomly selected.

The participants, males (n = 116) and females (n = 34), were 11 to 18 years of age (M = 13.65, SD = 1.9, Mdn = 13). Sixty-eight percent of the participants were European American (n = 102), 30.7 % were African American (n = 46), and 1.3% were Hispanic American (n = 2). Fifty-one of the 75 participants with E/BD were enrolled in special public day schools for students with severe E/BD. Students with difficulties such as thought disorders, severe aggression, and co-morbid disabilities (e.g., moderate mental retardation and emotional behavioral disorders) frequently receive services in this program. The program is operated as a statewide network of public day schools and satellite classes housed in public schools.

Instrumentation

Three instruments were administered to the participants: the Junior Eysenck Personality Questionnaire (JEPQ) (H. J. Eysenck & S. B. G. Eysenck, 1975), the Basic Adlerian Scales for Interpersonal Success-Adult (BASIS-A) (Wheeler, Kern & Curlette, 1993), and the Externalizing scale of the Youth Self-Report (YSR) (Achenbach, 1991). The JEPQ was used to evaluate

personality and the BASIS-A examined socialization. The Externalizing scale of the YSR evaluated conduct problem behavior.

The JEPQ is a child version of the adult EPQ and consists of 81 items. Respondents answer each item with a yes or no response. The JEPQ is designed to measure the P, E, and N personality traits and is based on extensive research (H. J. Eysenck & S. B. G. Eysenck, 1994). Test-retest reliabilities over one month for the JEPQ averaged from $\underline{r}$ = .61 to .88 on the P, E, N, and L Scales for 11 to 14 year old children. Internal consistency is also in the moderate to high range with reliabilities ranging from $\underline{r}$ = .61 to .85 (H. J. Eysenck & S. B. G. Eysenck, 1975). The JEPQ discriminates well between children with and without conduct problems. Studies generally indicate that children with conduct problems have high scores on P, E, N, and low L scores in comparison to control participants (e.g., Berman & Paisey, 1984; Gabrys et al., 1988).

The BASIS-A is a 65-item questionnaire based on Adlerian personality theory. The BASIS-A assesses socialization by asking respondents to evaluate their home and school experiences before the age of nine. The appropriateness of using the BASIS-A with the sample in this study was confirmed by one of the authors of the instrument (R. M. Kern, personal communication, January 27, 2000). In Adlerian theory, one's interpretation of early experiences leads to adoption of a life-style. The life-style adopted contributes to effectiveness in social, work, and personal relationships (Kern, Wheeler, & Curlette, 1993). The BASIS-A has five primary scales and five secondary scales (see Figure 1). Test-retest reliability reported for the BASIS-A scales ranged from $\underline{r}$ = .66 to .87. Adlerian experts were used to determine if the BASIS-A items accurately reflected Adlerian themes (Curlette, Wheeler, & Kern, 1993). Further, over 30 major research studies during the past 20 years have supported the content validity of the BASIS-A (Kern et al., 1993).

Insert Figure 1

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The YSR contains two broadband scales for problem behaviors termed Internalizing and Externalizing. Since the present study focused on antisocial and aggressive behavior, the Externalizing scale of the YSR was the most applicable. The YSR Externalizing scale consists of 33 items to which students respond on a Likert scale with a rating of 0 through 2, with 2 indicating a high level of the behavior. The YSR is viewed as a highly reliable and valid instrument and the norming procedures are regarded as impeccable (Christenson, 1992). Test-retest reliability is reported as having a median of $r = .81$. The Externalizing scale of the YSR has discriminant validity and differentiates children and adolescents with behavioral problems from those who do not have problems (Elliott & Busse, 1992).

Procedure

Questionnaires were administered at various times throughout the school day. The questionnaires were administered to small groups of five to six students in an empty classroom or office at participating schools. Participants with severe emotional problems who were unable to complete the questionnaire in a small group were administered the questionnaires individually. In most cases the questionnaires were administered in one session ranging in length from 20 to 45 minutes. However, in a few cases ($n = 5$) the questionnaires were administered in two short sessions because the participants were unable to maintain attention to the task except for very

short periods. The sequence used to administer the instruments was counterbalanced. The investigator and two doctoral students trained to administer the instruments collected the data. The doctoral students were given step-by-step instructions on administering the instruments. Participants were instructed to ask questions during the administration of the questionnaires, if they didn't understand something.

Design

Two categorical independent variables were evaluated. One independent variable was placement in either E/BD or general education. The groups were compared on the dependent variables of personality, socialization and behavior. The dependent variables were operationalized through the administration of three sets of questionnaires. Dependent variables measuring personality were group mean scores on the P, E, N, and L scales of the JEPQ (H. J. Eysenck & S. B. G. Eysenck, 1975). Group means on the BASIS-A scales (Wheeler et al., 1993) were the dependent variables for socialization. The dependent variable for current behavior was the mean score on the Externalizing scale of the YSR (Achenbach, 1991) for each group.

The second independent variable was classification based on the level of self-reported externalizing behavioral problems. Three groups were created using T scores from the Externalizing scale of the YSR. The groups were average or below average externalizing problems (T score = 59 or less), moderate externalizing problems (T score = 60 through 69), and severe externalizing problems (T score = 70 or above). Group assignments were based upon deviation from the mean on the Externalizing scale, which has a mean of 50 and a standard deviation of 10. The higher the deviation from the mean the more indicative the score is of externalizing behavioral difficulties. The groups were compared on the dependent variables from the JEPQ and BASIS-A.

Results

The first analysis was a MANOVA, which yielded a significant effect for educational placement (F [1, 148] = 4.5, $p < .01$) and group placement based on YSR scores (F [2, 147] = 3.6, $p < .01$). A significant interaction also occurred between the two main effects ($F = 2.1$, $p < .01$). The MANOVA was followed by a series of one-way ANOVAs. The first ANOVA was with the placement variable (i.e., E/BD or general education) and indicated a number of differences between the two groups (see Tables 1 & 2). Participants with E/BD ($n = 75$) had higher YSR scores than general education participants ($n = 75$). Participants with E/BD were also significantly higher on the N scale of the JEPQ and significantly lower on the E scale than general education participants. No significant differences were found between the participants on the P or L scale, although P was in the expected direction and approached significance. Participants with E/BD were significantly higher on the TC, BC, and H scales of the BASIS-A than the general education participants. Participants with E/BD were significantly lower on the BSI, GA, WR, LBA and S scales of the BASIS-A than general education participants.

Tables 1 & 2

About Here

The second ANOVA was with the level of externalizing behavior based on YSR scores. Seventy-seven participants were in the below average-to-average range for externalizing problems (T = 59 or less). Forty participants were in the moderate range for externalizing problems (T = 60 to 69). Thirty-three participants were in the severe range for externalizing

problems (T = 70 and above). Significant differences were found between the groups on the P, N, and L scales of the JEPQ. There was no difference found between the groups on E. The groups differed on all scales of the BASIS-A (see Tables 3 & 4).

Insert Table 3 & 4

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The ANOVA was followed by the Scheffe multiple comparison technique to determine differences between the groups (see Table 4). The post hoc analysis indicated that students who rated themselves highest on the YSR were significantly higher ($p < .05$) on the P and N scales of the JEPQ. These students were also significantly lower ($p < .05$) on the L scale of the JEPQ, and significantly lower ($p < .05$) on prosocial scales (GA, BSI, & WR) on the BASIS-A. These students were also significantly higher ($p < .05$) on BASIS-A variables suggesting weak socialization (H, TC, & BC). The results are relatively consistent with the ASB hypothesis, since the hypothesis predicts that elevated P and N along with socialization difficulties increase the risk for developing antisocial behavior.

There was also a significant interaction between the two main effects of educational placement and level of behavior problems. A new categorical variable with five levels was created to investigate this interaction. The variable was constructed from educational placement and level of behavior problems. The first group ($n = 29$) consisted of individuals placed in E/BD who rated themselves in the below average-to-average range of externalizing behavioral problems (EBDA). The second group ($n = 18$) included individuals in the E/BD program who rated themselves in the moderate range of externalizing behavior problems (EBDM). The third

group (n = 28) included students served in E/BD who rated themselves in the severe range of externalizing behavior problems (EBDS). The fourth group (n = 48) consisted of general education (GED) students who rated themselves in the below average- to-average range of externalizing behavior problems (GEDA). The fifth group (n = 27) consisted of general education students who rated themselves in the moderate to severe range of externalizing behavior problems (GEDMS). Only two subgroups of general education students were used because of the small number rating themselves in the severe range (n = 7).

An ANOVA indicated significant differences between the groups on the P, E, N, and L scales of the JEPQ. Significant differences between the groups were found on all scales of the BASIS-A (see Table 5). The ANOVA was followed by a Scheffe multiple comparison to identify differences between the groups (see Table 6). The analysis indicated that there were two sources of the interaction between placement and externalizing problems. The first was a significantly lower ($p < .05$) E scale score in the EBDA group (M = 15.76) in comparison to the GEDA group (M = 19.38). Both of these groups reported an average level of behavioral problems; however, the special education group reported a lower level of extroversion. The second source of interaction was also between the EBDA and GEDA groups. The EBDA group (M = 17.86) was significantly lower ($p < .05$) on S than the GEDA group (M = 20.56). The lower S scale score of the EBDA participants suggests weaker early socialization experiences in comparison to their GEDA peers, but neither mean should be viewed as an extreme score.

Tables 5 & 6

About Here

The analysis also showed that the EBDS and GEDMS groups were significantly higher ($p < .05$) on the P scale than the EBDA and GEDA groups. The EBDS group was higher ($p < .05$) on N than the EBDA group. The EBDS, EBDM and GEDMS groups were higher ($p < .05$) on N than the GEDA groups. The EBDA group was higher ($p < .05$) on the L Scale than the EBDS or GEDMS groups. The results on the P and N scales are in line with the ASB hypothesis (i.e., higher scores on these scales are associated with more severe behavior problems). The elevated L in the EBDA group is also in line with the ASB hypothesis. The level of L in the GEDA group was in the predicted direction but was not statistically significant.

On the BASIS-A scales, the EBDS group was lower ($p < .05$) on the GA scale than all other groups. The EBDS group was also lower ($p < .05$) than the EBDA, GEDA, and GEDMS groups on the S scale. The EBDS group was higher ($p < .05$) than the EBDA, GEDA, and GEDMS groups on the TC and BC scales. These differences illustrate the general trend of the group scores on the BASIS-A scales (i.e., The EBDS group is higher on scales that indicate difficult socialization, for example, BC) and lower on scales that indicate adequate socialization (e.g., GA.). These results are supportive of the ASB hypothesis.

Discussion

The purpose of this study was to examine predictions derived from Eysenck's ASB hypothesis in samples of EBD and regular education students. Specifically, the study attempted to determine if general education students and students with EBD differed in personality and socialization. Further, if the sample, reclassified by levels of behavior problems, differed in personality and socialization. The study found personality and socialization differences between general education students and students with EBD. The results also indicated that there were distinctive differences in personality and socialization in both types of students who reported

high levels of behavior problems.

There was clear support for Eysenck's hypothesis that elevated scores on the P and N scales are related to antisocial behavior as measured by the YSR. Students whose behavior problems were at the severe level were the highest on the P scale followed by students with problems at the moderate level and then students at the average-to-low level. Students who reported a severe level of behavior problems were significantly higher on the N scale than the groups that reported either moderate or average-to-low levels of behavior problems. These results are consistent with previous studies (e.g., Berman & Paisey, 1984; S. Eysenck, 1981). The results also support the role of low L scores in confirming the ASB profile. The L scores and YSR scores for students in the study covaried in an inverse direction. This finding is consistent with those obtained in previous studies (e.g., Jamison, 1980; Lane, 1987).

This study did not find support for the predicted elevation of E scores in students with behavior problems. The contrary finding for E may be due to the nature of the sample in this study. Studies that have confirmed the prediction usually used samples from more deviant groups such as clinical populations and incarcerated delinquents (e.g., Berman & Paisey, 1984; Gabrys, 1983). The findings for the E scale in this sample of public school students are consistent with the findings in two public school studies done by Porrata (1991, 1997).

The analysis found support for weak socialization as a factor in behavior problems. Participants with the higher YSR scores had low scores on the BASIS-A indicating little interest in prosocial interaction with others or need for approval from others. According to Adlerian theory, these tendencies reflect an early socialization lacking positive social recognition, chaotic and possibly dangerous home conditions, and possibly traumatic experiences as well. Thus, the low BASIS-A scores suggest a view of the world as hostile and dangerous, which requires a

vigilant and defensive posture toward the social environment (Kern et al., 1993).

The results of the analysis by level of problem behavior supported Eysenck's hypothesis that elevated scores on the P and N scales coupled with poor socialization are related to the development of serious antisocial behavior. The results of the analysis by placement did not indicate that children placed in E/BD are more likely than general education students to have the ASB profile. However, students with E/BD significantly differ from general education students on both the N and E scales. The current federal definition requires an emotional component in behavioral problems to qualify for E/BD services (Kauffman, 1997). Further, the state in which the samples in this study were taken places a strong emphasis on an emotional component in its definition. The intent of this emphasis appears to be to disqualify for service "socially maladjusted" students (i.e., students with antisocial behavior disorders). In Eysenck's theory emotional disorders such as anxiety and depression will usually be found to be associated with high scores on the N scale and especially in combination with low E scale scores (Eysenck, 1997). Such individuals tend to respond with excessive emotional arousal, especially anxiety, to environmental stimuli and exhibit inappropriate behavior motivated by the emotional arousal (Claridge, 1995).

The general education participants were significantly higher on the E scale than the participants with E/BD. However, it should be noted that the mean E score in the general education sample is virtually the same as the normative E score for the EPQJ. The lower E scores in the special education sample appear to be the reason for the statistical interaction that occurs between placement and problem behavior. Students with E/BD who report average levels of behavior problems are significantly lower on the E scale than general education students who report an average problem level. The lower mean E score for the students with E/BD, which was

below the normative mean for the EPQJ, is often associated with tendencies toward anxiety and withdrawal. According to Eysenck's theory, low E and high N are the best predictors for the development of emotional problems. The analysis also indicated that students with E/BD reported more difficult socialization experiences than did their general education peers. They were significantly higher on the BASIS-A scales (i.e., TC, BC, and H), which suggest weak socialization and were significantly lower on the BASIS-A scales (i.e., BSI, GA, WR, and S), which suggest appropriate socialization.

There was no statistically significant difference between the participants with E/BD and general education participants on the P or L scales. The difference on the P scale, however, approached significance and was in the predicted direction. The weaker than predicted presence of P in the E/BD sample may be an artifact of the E/BD definition. The current federal definition and the state definition where the data were collected exclude students from E/BD who are judged to be socially maladjusted. Social maladjustment is an undefined term with varying interpretations (Center, 1990; Center & Eden, 1989), but one of the more common interpretations is that it is equivalent to Conduct Disorder (Clarizio, 1987; Slenkovich, 1983). It is likely that in this state many students with externalizing behavior problems are excluded from special education. Students with a high level of externalizing problems are the type students expected to have elevated P scale scores. Exclusion of many so called "socially maladjusted" students would explain the lack of significant difference on the P scale. Since low L scores are associated with high P scores, the same reasoning might apply to the failure to find a significant difference on the L scale.

The results of this study are limited by an inability to control for intellectual differences across the groups. Eysenck (1997) has indicated that high P in conjunction with low g and

school failure increases the difficulty of socialization. Specifically, low general intelligence and school failure in conjunction with difficult personality/temperament and poor socialization represents the greatest risk for developing ASB. General intelligence information (i.e., scores and achievement data) would have made possible a more complete analysis of the hypothesis under investigation, but access to that data was not available. However, Kemp and Center (2000b) were able to obtain IQ scores and achievement data on young adults parolees in a study that also evaluated the ASB hypothesis. In that study, the prediction about general intelligence was not supported but there was support for poor academic achievement. Since poor socialization was pervasive in the study population, it may not have been well suited to examine the possible relationship between intelligence and socialization. Further, that study revealed that this highly deviant population had very few members who had received special education services during their public school careers. This both confirms the relative success of many school systems to exclude students with antisocial behavior from special education and the subsequent cost to both those individuals and society.

Conclusion

The results of this study indicate that both temperament-based personality traits and socialization are related to the risk for developing ASB. Results for three of the four Eysenckian dimensions are consistent with the ASB hypothesis (i.e., high P, N and low L). In general, students reporting higher levels of antisocial behavior indicated more chaotic childhood experiences, a lack of positive recognition, and a need to dominate others, which is also consistent with the ASB hypothesis. This study also found that students with E/BD are more likely to have a personality profile associated with the risks for developing emotional problems. The lower socialization scores on the BASIS-A in the participants with E/BD appear to indicate a

poorer adaptation to their social environment, which may be exacerbated by their temperament characteristics.

Future research on the ASB hypothesis should address the component of general intelligence and school achievement in relation to the difficult temperament profile and poor socialization. The current study also needs to be replicated with a larger sample to further substantiate the findings. The findings suggest possibilities for additional research on risk assessment and preventive programming based on temperament-based personality profiles. Further, information about temperament-based personality traits may be useful for better individualizing interventions for students already identified with emotional or behavior disorders (Center & Kemp, in press; Wakefield, 1979).

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BASIS-A Primary Scales:

Note: A high score on a scale or subscale indicates a style that strongly reflects the personality characteristic measured.

1. *Belonging-Social Interest* (BSI) measures one's interest in functioning with others in groups.
2. *Going Along* (GA) measures one's interest in rule-governed behavior and working with others cooperatively.
3. *Taking Charge* (TC) measures one's interest in being in control and having one's needs met.
4. *Wanting Recognition* (WR) measures one's need for approval and recognition from others.
5. *Being Cautious* (BC) measures one's degree of mistrust and caution in relationships with others.

Secondary Scales:

1. *Harshness* (H) measures one's belief that early childhood experiences in the home were traumatic or chaotic.
2. *Softness* (S) measures one's belief that early childhood experiences were functional and pleasant.
3. *Entitlement* (EN) measures one's belief that early childhood was demarcated by permissiveness and being overprotected.
4. *Liked by All* (LBA) measures one's need to please others and gain approval based on winning approval during childhood.
5. *Striving for Perfection* (PER) measures one's need for perfectionism based on early experiences with very high parental expectations.

Figure 1. Brief description of BASIS-A scales based on descriptions in Kern et al. (1993).

Table 1

ANOVA Results of the YSR, JEPQ and BASIS-A with Placement

Scale	MS Between	MS Within	F	p
YSR	1633.50	84.10	19.42	.01
P	29.04	8.76	3.32	.07
E	204.17	14.26	14.32	.01
N	188.16	20.44	9.207	.003
L	.960	16.231	.059	.808
BSI	288.43	33.18	8.69	.004
GA	957.61	44.18	21.67	.01
TC	302.46	41.53	7.283	.008
WR	500.51	37.81	13.24	.01
BC	1232.67	39.63	31.10	.01
H	61.44	10.06	6.12	.015
EN	28.17	29.40	.958	.329
LBA	144.06	13.38	10.77	.001
PER	60.17	15.84	3.80	.053
S	552.96	13.37	41.35	.01

Note df = 1, 148

Table 2

Means and Standard Deviations for the YSR, JEPQ, and BASIS-A with Placement

	E/BD Students (n = 75)		GED Students (n = 75)	
Scale	M	SD	M	SD
YSR	22.67	10.23	16.07	7.97
P	5.00	2.91	4.12	3.01
E	17.04	4.27	19.37	3.20
N	11.55	4.63	9.30	4.41
L	7.37	4.23	7.21	3.81
BSI	33.25	6.52	36.03	4.89
GA	22.51	7.67	27.56	5.44
TC	22.99	7.65	20.15	4.96
WR	39.32	7.12	42.97	5.00
BC	20.85	7.40	15.12	4.95
H	14.23	3.32	12.97	3.02
EN	17.83	5.28	16.96	5.10
LBA	20.61	3.87	22.57	3.43
PER	20.40	4.30	21.67	3.63
S	16.07	4.37	19.91	2.77

Table 3

ANOVA Results of the JEPQ and BASIS-A with Levels of Behavior Problems

Scale	MS Between	MS Within	F	p
P	181.57	6.543	27.75	.01
E	6.66	15.655	.426	.65
N	418.38	16.16	25.89	.01
L	160.454	14.17	11.33	.01
BSI	136.99	33.50	4.09	.019
GA	1604.42	29.17	55.00	.01
TC	780.01	33.26	23.45	.01
WR	360.01	36.58	9.84	.01
BC	942.16	35.47	26.56	.01
H	131.07	8.76	14.96	.01
EN	205.96	26.99	7.63	.001
LBA	123.09	12.78	9.64	.01
PER	141.68	14.43	9.82	.01
S	248.97	13.84	17.99	.01

Note df = 2, 147

Table 4

Means and Standard Deviations for the JEPQ and BASIS-A with the Average, Moderate, and Severe Levels of Behavior Problems

Scale	(1) Average M	Average SD	(2) Moderate M	Moderate SD	(3) Severe M	Severe SD	Scheffe $p < .05$
P	3.13	2.56	5.4	2.42	6.88	2.71	3 > 1, 2 > 1*
E	18.01	4.18	18.7	3.57	18.06	3.87	none
N	8.31	4.1	11.45	4.32	14.12	3.41	3 > 1, 3 > 2, 2 > 1
L	8.53	3.98	6.93	3.74	4.85	3.22	1 > 3
BSI	35.86	5.84	34.03	5.61	32.55	5.86	1 > 3
GA	28.94	5.14	23.93	5.56	17.27	5.8	1 > 2, 1 > 3, 2 > 3
TC	18.9	4.83	22.18	6.06	27.06	7.25	3 > 1, 3 > 2, 2 > 1
WR	42.55	5.66	41.83	6.36	37.06	6.53	1 > 3, 2 > 3
BC	15.0	4.77	18.83	6.25	23.94	7.82	3 > 1, 3 > 2, 2 > 1
H	12.52	2.85	13.75	3.06	15.88	3.1	3 > 1, 3 > 2
EN	16.0	4.91	17.78	5.2	20.18	5.82	3 > 1
LBA	22.3	3.34	22.23	3.17	19.18	4.45	1 > 3, 2 > 3
PER	22.36	3.38	19.83	3.83	19.39	4.62	1 > 2, 1 > 3
S	19.55	3.28	17.48	3.62	14.97	4.7	1 > 2, 1 > 3, 2 > 3

* 1 = average or below average rating, 2 = moderate rating, 3 = severe rating

Table 5

ANOVA Results of the JEPQ and BASIS-A for Placement with Levels of Behavior Problems

Scale	MS Between	MS Within	F	p
P	92.17	6.6	13.98	.01
E	70.77	14.01	5.05	.001
N	201.58	16.6	12.15	.01
L	82.37	14.30	5.76	.01
BSI	128.16	32.32	3.97	.004
GA	839.63	28.54	29.42	.01
TC	415.00	33.03	12.57	.01
WR	187.85	36.87	5.1	.001
BC	590.71	32.66	18.09	.01
H	56.91	9.12	6.24	.01
EN	124.39	26.77	4.65	.001
LBA	58.97	13.02	4.53	.002
PER	80.62	14.36	5.61	.01
S	198.22	11.99	16.53	.01

Note df = 4, 145

Table 6

Means and Standard Deviations for Placement with Levels of Behavior Problems

Scale	(1) EBDA M	(2) EBDM M	(3) EBDS M	(4) GEDA M	(5) GEDMS M	Scheffe p < .05
P	3.52 (2.76)	4.83 (2.23)	6.64 (2.63)	2.9 (2.43)	6.3 (2.72)	3 > 1, 3 > 4* 5 > 1, 5 > 4
E	15.76 (4.9)	18.06 (3.13)	17.71 (4.0)	19.38 (2.97)	19.37 (3.64)	1 < 4, 1 < 5
N	9.10 (4.39)	11.83 (4.74)	13.89 (3.5)	7.83 (3.88)	11.93 (4.14)	3 > 1, 3 > 4 2 > 4, 5 > 4
L	9.28 (4.17)	7.56 (4.37)	5.29 (3.26)	8.08 (3.84)	5.67 (3.29)	1 > 3, 1 > 5
BSI	33.45 (7.5)	33.39 (5.99)	32.96 (5.94)	37.31 (4.0)	33.74 (5.54)	3 < 4
GA	28.38 (6.12)	22.39 (5.45)	16.5 (5.41)	29.27 (4.48)	24.52 (5.73)	3 < 1, 3 < 2, 3 < 4, 3 < 5
TC	18.48 (5.39)	22.83 (7.63)	27.75 (6.94)	19.15 (4.5)	21.93 (5.32)	3 > 1, 3 >4, 3 > 5
WR	40.69 (7.01)	40.28 (7.46)	37.29 (6.78)	43.67 (4.37)	41.74 (5.83)	3 < 4
BC	17.48 (5.44)	20.11 (7.32)	24.82 (7.52)	13.5 (3.62)	18.0 (5.72)	3 > 1, 3 > 4, 3 > 5
H	13.14 (3.27)	14.0 (3.46)	15.5 (2.93)	12.15 (2.52)	14.37 (3.34)	3 > 4
EN	15.62 (5.34)	16.83 (5.14)	20.75 (5.39)	16.23 (4.67)	18.26 (5.64)	3 > 1, 3 > 4
LBA	20.93 (3.62)	21.67 (3.33)	19.61 (4.32)	23.13 (2.91)	21.59 (4.08)	3 < 4
PER	21.45 (3.74)	20.0 (4.1)	19.57 (4.87)	22.92 (3.05)	19.44 (3.55)	3 < 4
S	17.86 (3.74)	15.94 (4.01)	14.29 (4.57)	20.56 (2.5)	18.74 (2.89)	3 < 1, 3 < 4, 3 < 5, 2 < 4, 1 < 4

SD are presented in parentheses.

*(1) EBDA = E/BD and low on YSR, (2) EBDM= E/BD and moderate on YSR, (3) EBDS = E/BD and high on YSR (4) GEDA = GEN ED. and low on YSR, (5) GEDMS= GEN ED. and moderate/high YSR

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