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Intelligence and social competence among high-risk adolescents

Suniya S. Luthar and **Edward Zigler**
Yale University

Abstract

Interactions between intelligence and psychosocial factors were examined in terms of influences on social competence among 144 inner-city ninth-grade students. Psychosocial variables examined included ego development, locus of control, and positive and negative life events. Definitions of social competence were based on peer ratings, teacher ratings, and school grades. Results indicated that, unlike their less intelligent peers, intelligent youngsters showed higher competence levels at high versus low levels of both ego development and internal locus of control. Findings were interpreted in the context of sociocultural influences on academic achievement among disadvantaged adolescents.

In recent years, developmental psychopathologists have become increasingly concerned with exploring risk and protective factors in child development. Studies have examined how various dispositional and environmental variables contribute—individually and in interaction with each other—to the development and maintenance of social competence under conditions of high risk.

Empirical research in the area has indicated that personal attributes of the child constitute a major class of factors that protect against high-risk conditions (Garmezy, 1985). Among the personal attributes investigated within the vulnerability-protection perspective, intelligence has been among the most widely studied. Intellectual ability has been found to be a strong correlate of school-based competence among high-risk children and adolescents, showing associations with academic achievement as well as with ratings by peers and teachers (Garmezy, Masten, & Tellegen, 1984; Luthar, 1991;Mastenet al., 1988).

Most extant theories on the role of intelligence in adjustment predict simple unidirectional effects, with cognitive deficits leading to adjustment difficulties either directly or through mediating variables (White, Moffitt, & Silva, 1989). However, research has suggested that the role of intelligence in adjustment may be somewhat complex, often going beyond simple correlational effects. So far, interaction effects have rarely been addressed in theories of intelligence and adjustment; such effects clearly warrant further attention (Luthar & Zigler, 1991; White et al., 1989).

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Address reprint requests to: Suniya Luthar, Ph.D., Department of Psychiatry, Yale University, 540 Ella T. Grasso Boulevard, New Haven, CT 06519.

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Recent studies on resilience have provided some initial insights on ways in which intelligence might interact with other variables in predicting adjustment. Some studies have found that intelligence is a protective factor against life stress. For example, in a study on preadolescent children, Masten et al. (1988) found that with increases in stressors, intelligent children did not show the declines in functioning demonstrated by their less intelligent peers. Another study (Kandel et al., 1988) showed IQ to be a protective factor for adult men who were at high risk for antisocial behaviors. In this investigation, men who did not evidence criminal behaviors despite being at high risk (i.e., having severely criminal fathers) had a significantly higher IQ than did men in the three other groups defined by high- versus low-risk status and presence versus absence of serious criminal acts.

Other studies have provided results that question the notion that intelligence is necessarily a protective factor against risk conditions. A study of inner-city adolescents (Luthar, 1991) revealed, on the contrary, that intelligence was involved in so-called vulnerability processes. In general, intelligent children performed better at school than less intelligent ones. At high levels of life stress, however, they lost their advantage and demonstrated competence levels more similar to those of their less intelligent peers. Although their performance scores never dropped to levels much lower than those of low-intelligence children, the marked superiority in performance of bright children versus others was evident only when levels of life stress were low. Similarly, a prospective replication of the Kandel et al. (1988) study (White et al., 1989) did not yield significant interaction effects involving intelligence of the type obtained by Kandel and colleagues.

Various interpretations have been offered for findings involving interactions between intelligence and stressors in predicting adjustment. For instance, in explaining findings of the protective function of intelligence, it has been suggested that a high IQ may involve assets in terms of problem-solving and coping: Intelligent children may be better able to evaluate consequences of their behaviors, to delay gratification, and to contain impulses (Garmezy & Masten, 1991). In the context of findings of intelligence operating as a vulnerability factor, it has been argued that more intelligent children tend to have higher levels of sensitivity to their environments (Zigler & Farber, 1985). This greater sensitivity may lead to higher susceptibility to life stressors of brighter children as compared to those who are less intelligent (Luthar, 1991).

An alternative approach toward interpreting so-called vulnerability effects involving intelligence entails a different set of initial assumptions about school performance among disadvantaged adolescents. In considering the “reactivity” hypothesis cited by Luthar (1991), the implicit assumption is that intelligent inner-city youth generally perform well, but that they tend to falter under adverse life situations. Previous research, however, suggests that disadvantaged youngsters are often *not* very motivated to perform well at school (Gruen & Zigler, 1968; Ogbu, 1978, 1982). These findings suggest the utility of considering interpretations focusing on possible *increments* in school performance under advantageous conditions among bright inner-city youth, rather than those focusing on decrements in performance under adversity.

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A primary objective of this study was to explore further the possibility that intelligent disadvantaged teenagers show expected high levels of school-based competence only in the presence of "potentiating" or "facilitating" factors. Based on Luthar's (1991) findings of significantly higher competence under low stress versus high stress among high- but not among low-intelligence youngsters, the attempt, in this study, was to ascertain whether or not such interactive trends might be replicated with other variables that, like low life stress, have also been shown to be positively related to social competence levels.

Dispositional variables selected for study as "moderator variables," or those with which intelligence might interact in predicting competence, included ego development and locus of control. Both these variables are strongly related to social competence and adjustment, yet they are limited in the variance shared with each other and/or with intelligence. Ego development, a construct conceptualized by Loevinger (1976), is a "master" trait reflecting character development (Hauser, 1976). With increasing ego development levels, individuals show increasingly mature functioning across the domains of impulse control, cognitive style, moral development, and interpersonal relations (Hauser, Borman, Powers, Jacobson, & Noam, 1990).

There are strong theoretical and empirical links between ego development and adaptation (Hauser et al., 1990). Previous research has established that low levels of ego development are associated with a range of emotional and behavioral maladjustment indices (Browning & Quinlan, 1985; Frank &Quinlan, 1976; Hauser et al., 1984; Noam et al., 1984). Within this study, the expectation was that high ego development would facilitate high levels of competence among intelligent adolescents.

Several studies indicate positive associations between school-based competence and internal locus of control, or the belief that events occurring in one's life are largely caused by the self rather than by external factors (Crandall & Lacey, 1972; Joe, 1971; Solomon, Houlihan, Busse, & Parelius, 1971). Research has also indicated that externality is related to emotional difficulties and to psychological maladjustment among children (Beck & Ollendick, 1976; Benassi, Sweeney, & Dufour, 1988; Duke & Fenhagen, 1975; Kendall, Finch, Little, Chirico, & Ollendick, 1978; Luthar, Zigler, & Goldstein, 1992).

Previous research on the interrelationships between intelligence and both ego development and locus of control indicates limited shared variance. Ego development encompasses aspects of cognitive functioning and beliefs about control as well as interpersonal functioning and represents more than any of these considered individually (Hauser, 1976; Hauser et al., 1990). Similarly, research has shown nonsignificant correlations between intelligence and locus of control (Nowicki & Strickland, 1973).

In addition to the two personal attributes selected, frequency of positive and negative life events were also included among the variables that might moderate associations between intelligence and competence levels. Inclusion of positive life events was based on documented theoretical and empirical associations between positive feeling states and coping (Lazarus, Kanner, & Folkman, 1980; Reich & Zautra, 1981; Rutter & Quinton, 1984). Interactions between negative life events and intelligence were examined here along

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with other interactions involving intelligence. This strategy was used to assess the robustness of earlier findings obtained with life stress (Luthar, 1991) and, in addition, to identify which of several effects involving intelligence might supersede others in displaying interactive trends such as those previously found.

In summary, the effort in this study was to reexamine previously identified "vulnerability" effects involving intelligence among disadvantaged teenagers. Ego development, internal locus of control, and positive and negative life events were each examined as potential moderators of intelligence in terms of its association with levels of socially competent behaviors.

Method

Sample characteristics

The sample consisted of 144 (62 boys, 82 girls) adolescents enrolled in an inner-city public school in Connecticut. In the school sampled, students were placed in five "gate" levels, with curricula of varying difficulty. For the present study, students were drawn from 10 ninth-grade classrooms with two classes randomly selected from each of the five gate levels. Complete data were obtained for 83% of the students enrolled in the classes sampled.

The mean age of the sample was 15.3 years (*SD* = 0.78) with a range of 14.0–17.2 years. As rated by the Two Factor Index of Social Position (Hollingshead & Redlich, 1958), the mean socioeconomic status (SES) of families was 52.4, which falls in the second lowest of the five Hollingshead categories. Seventy-seven percent of the students belonged to minority groups (with 45% black and 30% Hispanic).

Intelligence

The Raven's Standard Progressive Matrices (SPM) (Raven, Court, & Raven, 1977), a widely utilized test that is relatively culture-free, was used to assess intelligence. Acceptable psychometric properties of the SPM have been established in several investigations (Raven et al., 1977).

Research shows that of the five SPM Sets (A–E) younger children are not expected to solve more than the problems in Sets A and B and the easier problems in Sets C and D. For adults, on the other hand, these same problems provide little more than training in the method of working (Raven et al., 1977). In this study, therefore, Sets B–D were administered, with the anticipation that these three sets would be sufficient to capture the range of intellectual abilities within the adolescent sample under study. Preliminary data analyses supported this assumption; students' SPM scores fell in a normal distribution, with a range from 10 to 35 (the maximum possible score was 36).

School-based competence

Teacher ratings—The Teacher–Child Rating Scale (T-CRS) (Hightower et al., 1986) was given to English teachers of all students in the sample. A 36-item scale, the T-CRS assesses behaviors within two domains, with three scores within each: problems (acting out, shy-anxious, and learning) and adjustment (frustration tolerance, assertive social skills, and task

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orientation). Acceptable psychometric properties have been reported (Hightower et al., 1986).

Peer ratings—The Revised Class Play (RCP) (Masten, Morison, & Pellegrini, 1985) was used to assess peer reputation. RCP items have been found to fall into three major factors: Aggressive-Disruptive, Sensitive-Isolated, and Sociability-Leadership (Masten et al., 1985). In this study, principal components analyses of the RCP items were conducted on the whole sample, and for confirmatory purposes, on boys and girls and on two random halves of the sample. These analyses yielded a highly consistent pattern of results, wherein slopes of the eigenvalues indicated the presence of four main factors. Two of these factors were negative, i.e., Aggressive-Disruptive and Sensitive-Isolated. The single positive factor found by Masten et al. (1985) fell into two separate factors, labeled Sociability and Leadership. Based on these results, four RCP scores were developed. Masten et al. (1985) reported adequate coefficients of reliability and validity for the RCP. Acceptable reliability and validity levels for the four scores used in this study have also been demonstrated (Luthar, 1990).

School grades—School records were used to ascertain students' grades. Marks from two marking periods were collected for four academic courses, yielding a total of eight marks for each participant. These marks were converted into grades using a grid developed by school officials, which made it possible to compare marks across the five gate levels (which varied in curricula). Based on these eight scores, mean grades were computed.

Moderator variables

Locus of control—The Nowicki–Strickland Locus of Control scale (Nowicki & Strickland, 1973) was used to measure the extent to which children make external versus internal attributions. On this 40-item two-choice measure, high scores are indicative of high externality. Within this study, scoring was reversed to achieve consistency with the positive direction of scores for other moderator variables. High reliability and validity levels of this measure have been reported in several studies (Nowicki & Strickland, 1973).

Ego development—To assess ego development, the abbreviated version of the Sentence Completion Test, Form 81 (Loevinger, 1985), was administered. The item sum score was used to represent level of ego development in the statistical analyses. The Sentence Completion Test has been found to have acceptable levels of internal consistency, test-retest reliability, and construct and discriminant validity (Hauser, 1976; Loevinger, 1979, 1985; Redmore & Waldman, 1975).

Negative and positive life events—The Life Events Checklist (LEC) (Johnson & McCutcheon, 1980) consists of 46 events, along with four spaces for respondents to report events not specifically listed. This questionnaire asks about the number of events experienced during the previous year, whether each event experienced was seen as being undesirable (negative) or desirable (positive), and the extent to which events impacted respondents' lives. Research has indicated that summations of unit scores (each event weighted 1) are as highly correlated with dependent variables as are summed impact ratings (Johnson & Bradlyn, 1988; Johnson & McCutcheon, 1980). Simple counts of life events

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were therefore used in this study. Acceptable levels of test–retest reliability, convergent validity, and discriminant validity have been reported for both positive and negative experiences among adolescent samples (Brand & Johnson, 1982; Johnson, 1982).

Eighteen of the items on the LEC represent events over which a respondent would probably have little control (e.g., “parents separated”) and which, therefore, would be less likely to be confounded with adjustment indices as compared to events such as “failing a grade.” To protect against confounds with outcomes, some researchers (e.g., Gersten, Langner, Eisenberg, & Simcha-Fagan, 1977; Masten et al., 1988) have advocated the use of only those events that are uncontrollable. Others, however, have argued for the inclusion of both types of events, because (a) even those events that are under the person’s control can be highly stressful when experienced (Johnson, 1986) and (b) the use of a subset of uncontrollable items can significantly reduce the range and consequently affect the reliability and validity of the scale (Luthar, 1991).

Procedure

Data for this study were collected as part of a larger project on resilience among adolescence (Luthar, 1990). Data for each student were collected during three 45-min class periods allocated for English, on 3 consecutive days. Testing of the children was done in groups of 10–20. Questionnaires were administered in the same order to all the groups, with relatively structured, non-threatening measures administered at the beginning and end of each session. To ensure maximal participation, an incentive of $5 was offered to each student and teachers were given $1 for each student rating they completed.

Results

Data reduction

Standardized scores obtained from peer and teacher ratings were subjected to a factor analysis, to reduce the number of dependent variables by constructing a smaller set of composite variables. Results indicated three main factors, which together accounted for 77% of the total variance. Factor analyses conducted for boys and girls yielded similar results. Based on these analyses, three composite scores of competence were developed. Scoring operations were as follows (scales from which scores derive are in parentheses).

Assertive-Responsible = Frustration Tolerance (T-CRS) + Task Orientation (T-CRS) + Assertiveness (T-CRS) − Shy-Anxious (T-CRS) − Learning Problems (T-CRS)

Disruptive-Disengaged = Aggressive-Disruptive (RCP) + Acting Out (T-CRS) − Leadership (RCP)

Sociable = Sociable (RCP) − Sensitive-Isolated (RCP).

Descriptive statistics

Correlations among intelligence, competence, and moderator variables are presented in Table 1. As seen in Table 1, intelligence showed significant positive correlations with two of the competence variables, school grades and assertive-responsible. Intelligence was also strongly correlated with ego development, and modest correlations were obtained with

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negative events and internality in a negative and positive direction, respectively. With the exception of sociable, all competence indices were significantly intercorrelated. Low SES levels (represented by high scores on the Hollingshead index) were negatively related to intelligence, to assertive-responsible and school grades among the competence variables, and to internality and ego development among the moderators.

Compensatory and protective factors: Hierarchical regressions

Examination of the relationship among stress, competence, and potential moderator variables was done through hierarchical multiple regressions (Cohen & Cohen, 1975). This approach, recommended for designs that contain multiple independent variables, indicates the unique contribution of each predictor to the criterion, having taken into account the interrelationships among the predictors. The order in which variables are entered into regression equations is dictated by various considerations, as discussed by Cohen and Cohen (1975).

Separate regression analyses were conducted for each of the four scores of social competence, that is, the three composites and school grades. Gender and age, followed by SES, were the first independent variables entered into the regression equations, being more or less “fixed” factors, that is, those that cannot be affected by other independent variables in the equation. Given its central position in the study, intelligence was given precedence over other variables and was entered at Step 4. As noted by Cohen and Cohen (1975), variables that reflect the primary focus of the study are appropriately entered before other independent variables that are considered secondary (either because they have less relevance to the dependent variable in the study or because hypotheses about their relationships are weak or exploratory). The two life event scores (Steps 5 and 6) preceded ego development and internality (Steps 7 and 8), because life events are presumably less influenced by personality variables than the converse. The order of entry was allowed to vary in order of decreasing tolerance (Tabachnick & Fidell, 1989) for negative and positive event scores and for ego development and internality. Finally, Steps 9–12 included four interaction terms, between intelligence and each of the four moderator variables. In each case, again, order of entry was determined by decreasing tolerance. The interaction effects were entered last to determine their unique contribution to variance accounted for after the main effects had already been entered. To control for “experimentwise” error, individual interaction terms were examined only if the set yielded a statistically significant increase in R^2 in predicting competence.

Results of the hierarchical regressions conducted on the competence variables are presented in Tables 2–5. As seen in Table 2, significant and unique proportions of the variance in school grades were accounted for by age, SES, intelligence, negative events, positive events, and ego development. The set of interaction terms yielded a change in R^2 of .04, $p < .04$. The unique contribution of each interaction effect is presented in Table 2. As seen in Table 2, two of the four interaction terms were involved in significant effects, that is, those involving negative events and internality. For the assertive-responsible competence index, again, significant changes in R^2 were yielded by age, SES, intelligence, negative events, positive events, and ego development. The set of interaction terms yielded an increase of .06 in R^2, $p < .02$. As seen in Table 3, the interaction terms involving negative events and ego

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development were involved in significant effects. In addition, an effect of borderline significance, $p < .08$, was obtained with positive events.

Before interpreting any interaction effects—which were of primary interest in this study—each of the analyses reported earlier was repeated, with scores based on the 18 uncontrollable life events replacing total negative and positive event scores. In this set of analyses, the previously obtained interaction effects involving intelligence and both negative and positive events were no longer statistically significant and were, therefore, not explored any further. Interaction terms involving internality and ego development were, however, both significant in the second set of analyses as well, yielding effect sizes almost identical to those reported in the tables.

To interpret the significant interaction effects, simultaneous regression equations were solved following procedures adopted in similar studies (Garmezy et al., 1984; Luthar, 1991). For each significant effect, the equation was solved four times with “high” and “low” values of the moderator variable and stress (1 *SD* above and below the mean), with all other values set at the mean. Equations for significant interactions were solved at Step 9 (rather than at the specific step of entry), that is, after partialling main effects but before any other interaction effects were entered.

The illustrative values resulting from these computations are shown in Figures 1 and 2. As seen in Figure 1, having an internal locus of control was associated with relatively high performance among bright children, whereas less intelligent children performed somewhat worse in terms of school grades when they were predominantly internal in their orientation.

In the context of ego development, the results presented in Figure 2 indicate that, unlike their less intelligent peers, highly intelligent children showed significantly higher levels of classroom assertiveness at high versus low levels of ego development.

For the disruptive-disengaged competence measure, significant increases in R^2 were obtained for negative events and for ego development. The set of interaction terms did not yield a significant change in variance accounted for and was, therefore, not explored further.

As seen in Table 4, age was the only variable that accounted for a significant proportion of the variance in the sociable competence index. Again, a nonsignificant effect was obtained for the set of interaction terms.

Discussion

Results of this study corroborate earlier research indicating that intelligence is positively associated with indices of adjustment (Luthar et al., 1992). More interestingly, the present findings establish the importance of various interaction effects involving intelligence, in the prediction of socially competent behaviors. As compared to their less intelligent peers, intelligent inner-city youth were found to show considerably more variation in school-based performance depending on levels of ego development as well as internal locus of control.

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A variety of sources indicate relatively low investment in school-based performance among inner-city youth. For instance, research with black students has shown that external social structures, such as inequities in the social and educational systems, adversely affect motivation to succeed academically. Black children often view academic performance as futile, having learned early in life that success in school does not always lead to success in life (Ogbu, 1978, 1982). Recent reports also suggest that given their difficulties in securing productive spots in society, disadvantaged youngsters who are talented and who have organizational skills often tend to turn instead to illegal activities such as trading in drugs (Myers, 1990).

Interpreted in the context of such socio-cultural findings, the present results may be viewed as implying that various psychosocial assets may counteract the tendency of intelligent inner-city youngsters to reject academic effort in favor of other activities. Such youngsters may tend to maximize their potential at school if, for example, they believe that events in their lives are determined largely by their own efforts (internal locus of control) or if they have fairly good control over their impulses (high ego development).

Results of this study build upon earlier findings in clarifying processes that might underlie the fluctuations in performance observed at different risk levels among intelligent inner-city teenagers. While previously raised explanations (Luthar, 1991) referring to higher sensitivity among bright youth may seem reasonable in the context of negative life stressors, their extension to the present findings are clearly not as credible: It is implausible to suggest that it was their greater sensitivity that led intelligent youngsters to perform poorly in the presence of low versus high levels of internality. Interpretations based on the optimizing of performance under favorable conditions, on the other hand, can quite reasonably account for the spectrum of interaction effects considered here and, in addition, are consistent with other research evidence indicating relatively low motivation at school among inner-city youngsters.

The nature of the present findings gives rise to questions regarding the appropriateness of labels with which such effects are commonly associated. Typically, the term *vulnerability process* is used to connote effects in which a certain trait interacts with a condition of adversity, so that individuals high on that trait show greater deficits in performance than do those with lower levels (Luthar & Zigler, 1991). The label of *vulnerability*, however, carries the implication that individuals characterized by the trait tend to be at a disadvantage, and this is not necessarily valid. Frequently, although such individuals (e.g., those high on intelligence) may show greater declines with increasing adversities, their performance may not deteriorate to a level below that of those less well endowed. This was in fact the case in the present study. Thus, the trends seen in the findings involving intelligence, socioemotional adversities, and social competence appear to be inadequately captured by current terminology and models in resilience research.

Results of this study contrast with those of several other investigations that indicate that in the face of adversities, intelligent individuals continue to show outcomes that are considerably more positive than those seen among their less intelligent peers (Kandel et al., 1988; Masten et al., 1988). Differences among the samples examined across studies may

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underlie some of the variations in results. For instance, in the Masten et al. (1988) study, the focus was on preadolescent children. Processes involving intelligence and stress among young children may differ considerably from those found among disadvantaged teenagers: During the teen years, increasing freedom from home and school may attenuate an investment in school that is already somewhat weak, leading intelligent adolescents to use their talents in arenas other than academic achievement.

Another difference between this investigation and both the Kandel and Masten studies—and one that may contribute more strongly to the contrast in results—concerns the nature of the outcome variables. In both the studies that indicated protective effects of intelligence, outcome measures represented low levels of behavioral maladjustment (low disruptive behaviors among children and the absence of criminal involvement among adults). In the present study, effects obtained were in the context of socially competent behaviors. It could be argued that while intelligence may often help a high-risk youngster to stay out of serious trouble, it may not be enough, in itself, for the maintenance of behaviors that are not just adequate but that reflect high social competence. Considered in tandem, findings of all these studies underscore the complexity of associations between intelligence and moderators in terms of different indices of competence.

Results obtained within this study in the context of life events are pertinent to an ongoing debate in the field with regard to stress measurement. Interaction effects obtained with overall life events in this study were not replicated when only uncontrollable events were used. This failure to replicate results may be interpreted in one of two ways: as having resulted from either the appropriate removal of spurious shared variance (arising from confounded measurement) or the theoretically and psycho-metrically inappropriate omission of several stressors, which would necessarily curtail the reliability and the validity of the scale (see Johnson, 1986; Luthar, 1991). Clearly, both approaches to life event measurement have their own associated problems, and at this time, there is no convincing evidence indicating the superiority of either approach over the other in terms of the potential validity of the scores obtained. Given these dilemmas around measurement, no definitive conclusions regarding life events can be made based on the present findings (although it should be noted that the interaction effects involving stress and intelligence discussed by Luthar [1991] were demonstrated with the use of uncontrollable negative events as well as overall negative events).

The use of cross-sectional data in this investigation limits the extent to which inferences can be made regarding causal connections between variables. However, the consistency of findings on intelligence in interaction with a variety of moderators indicates that in future longitudinal studies, it would be useful to examine further causal relationships of the type suggested here. Additional areas that may be profitably explored in future work include the extent to which the present findings might generalize to other samples (e.g., school-aged disadvantaged children, middle- and upper-SES adults), and the ways in which different approaches to operationalizing intelligence might affect interrelationships of the type found here.

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In conclusion, results of this study indicated that, in general, intelligence operates as an asset among inner-city teenagers. However, intelligent adolescents in economically disadvantaged groups might often fail to maximize their potential. In such groups, the presence of one or more buffering factors may frequently be necessary for the maintenance of levels of academic performance that are commensurate with superior levels of cognitive abilities.

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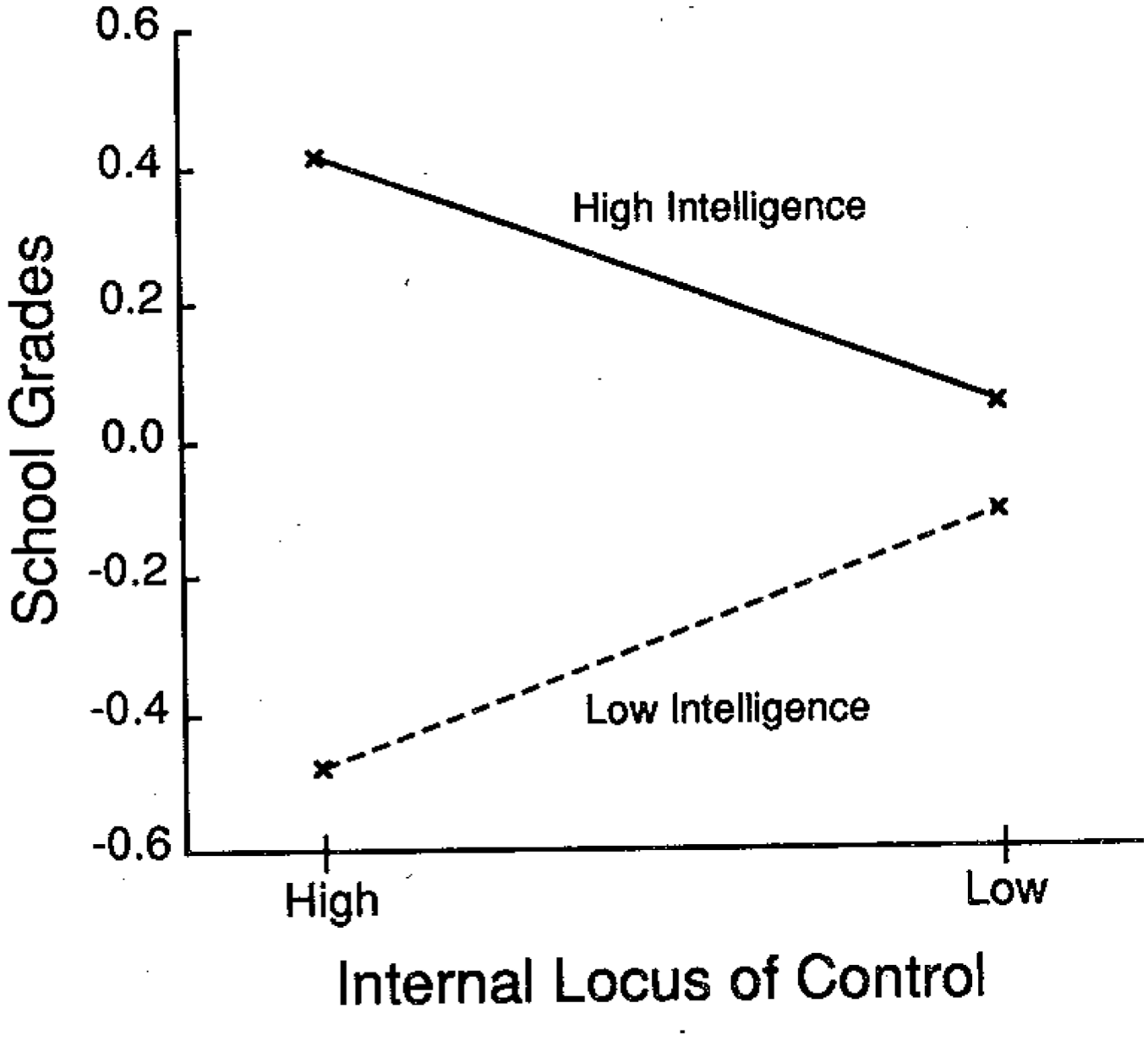

Figure 1.
Interaction between intelligence and internal locus of control in predicting scores on the school grades criterion of competence.

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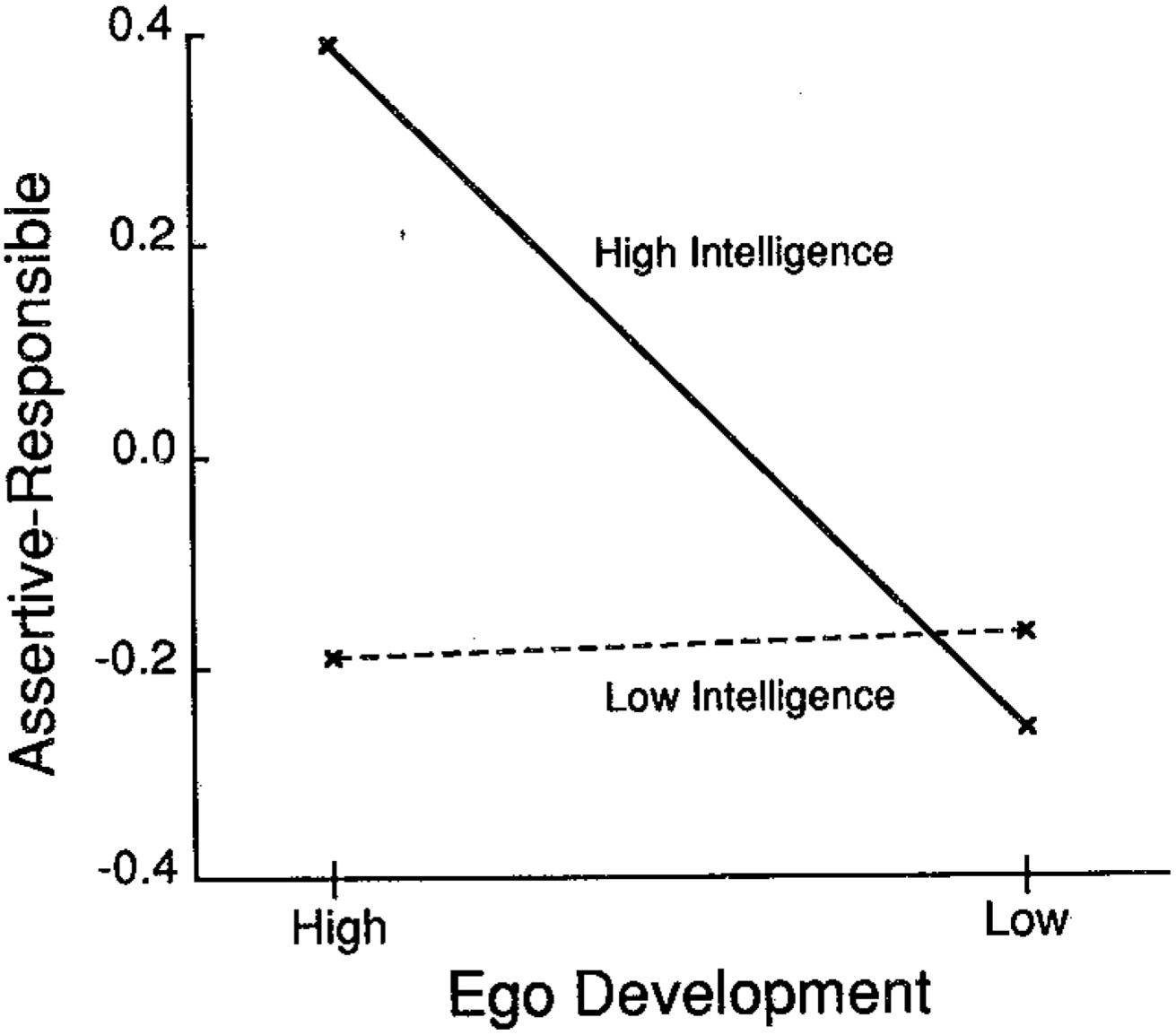

Figure 2.
Interaction between intelligence and ego development in predicting scores on the assertive-responsible criterion of competence.

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Table 1

Correlations among intelligence, measures of competence, and moderator variables

		1	2	3	4	5	6	7	8	9
1.	Intelligence									
2.	Assertiveness	.26**								
3.	Disruptiveness	.01	−.46***							
4.	Sociability	−.03	.05	.06						
5.	School grades	.46***	.68***	−.36***	−.05					
6.	Socioeconomic status	−.21**	−.19*	.01	.07	−.29***				
7.	Negative events	−.16*	−.33***	.35***	−.05	−.29***	.08			
8.	Positive events	.13	.24**	−.11	.06	.24**	−.13	−.01		
9.	Ego development	.36***	.36***	−.21**	−.06	.50***	−.17*	−.12	−.26**	
10.	Internality	.17*	.21**	−.05	.13	.26**	−.25**	−.30***	−.16*	−.29***

n = 144.

* *p* < .05.

** *p* < .01

*** *p* < .001.

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Table 2

Results of hierarchical regression analyses for the prediction of the variable School Grades

Step and Predictor		Multiple *R*	*F*	R^2	R^2 Change
1.	Gender	.13	2.60	.02	.02
2.	Age	.31	7.65^{**}	.10	$.08^{**}$
3.	Socioeconomic status	.41	9.37^{***}	.17	$.07^{**}$
4.	Intelligence	.55	14.91^{***}	.30	$.13^{***}$
5–6.	Negative events	.60	15.11^{***}	.35	$.05^{**}$
	Positive events	.61	13.74^{***}	38	$.02^{*}$
7–8.	Internality	.62	11.84^{***}	.38	.00
	Ego development	.66	12.93^{***}	.43	$.06^{***}$
9–12.	Intelligence × Negative Events	.68	12.54^{***}	.46	$.02^{*}$
	Intelligence × Positive Events	.68	11.21^{***}	.46	.00
	Intelligence × Internality	.69	10.79^{***}	.47	$.02^{*}$
	Intelligence × Ego Development	.69	9.89^{***}	.48	.00

$n = 144$.

$^{*}p < .05$.

$^{**}p < .01$.

$^{***}p < .0001$.

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Table 3

Results of hierarchical regression analyses for the prediction of the variable Assertive-Responsible

Step and Predictor		Multiple *R*	*F*	R^2	R^2 Change
1.	Gender	.03	0.13	.00	.00
2.	Age	.31	7.25^{**}	.10	$.09^{***}$
3.	Socioeconomic status	.35	6.34^{***}	.12	$.03^{*}$
4.	Intelligence	.38	6.00^{***}	.15	$.03^{*}$
5–6.	Negative events	.48	8.46^{***}	.24	$.09^{***}$
	Positive events	.52	8.26^{***}	.27	$.03^{*}$
7–8.	Internality	.52	7.06^{***}	.27	.00
	Ego development	.55	7.12^{***}	.30	$.03^{*}$
9–12.	Intelligence × Negative Events	.57	7.09^{***}	.32	$.03^{*}$
	Intelligence × Positive Events	.58	6.78^{***}	.34	.02
	Intelligence × Internality	.58	6.12^{***}	.34	.00
	Intelligence × Ego Development	.60	6.08^{***}	.36	$.02^{*}$

$n = 144$.

$^{*}p < .05$.

$^{**}p < .01$.

$^{***}p < .0001$.

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Table 4

Results of hierarchical regression analyses for the prediction of the variable Disruptive-Disengaged

Step and Predictor		Multiple *R*	*F*	R^2	R^2 Change
1.	Gender	.05	.40	.00	.00
2.	Age	.10	.67	.01	.01
3.	Socioeconomic status	.10	.45	.01	.00
4.	Intelligence	.10	.35	.01	.00
5–6.	Negative events	.38	4.58**	.14	.13***
	Positive events	.39	4.14**	.15	.01
7–8.	Internality	.40	3.65**	.16	.01
	Ego development	.43	3.92***	.19	.03*
9–12.	Interaction terms	.46	2.88**	.21	.02

Note: Steps 9–12 include four interaction terms, that is, intelligence by negative events, positive events, internality, and ego development.

$n = 144$.

* $p < .05$.

** $p < .01$.

*** $p < .0001$.

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Table 5

Results of hierarchical regression analyses for the prediction of the variable Sociable

Step and Predictor		Multiple *R*	*F*	R^2	R^2 Change
1.	Gender	.03	0.16	.00	.00
2.	Age	.20	2.91	.04	.04*
3.	Socioeconomic status	.21	2.06	.04	.00
4.	Intelligence	.21	1.57	.04	.00
5–6.	Negative events	.21	1.31	.05	.00
	Positive events	.23	1.31	.05	.01
7–8.	Internality	.28	1.63	.08	.02
	Ego development	.30	1.60	.09	.01
9–12.	Interaction terms	.31	1.12	.09	.01

Note: Steps 9–12 include four interaction terms, that is, intelligence by negative events, positive events, internality, and ego development.

$n = 144$.

* $p < .05$.

** $p < .01$.

*** $p < .0001$.