

# The Relation Between Socialization and Antisocial Behavior, Substance Use, and Family Conflict in College Students

David S. Kosson and Brian L. Steuerwald

*University of North Carolina at Greensboro*

Joseph P. Newman

*University of Wisconsin-Madison*

Cathy S. Widom

*The University at Albany*

Gough's (1960) Socialization (So) scale has been widely used as a measure of the extent to which societal values are internalized. It is well documented that antisocial individuals evidence low So scores but less clear that low So scores predict antisocial behavior in nonclinical samples. Two studies conducted at different universities in different geographical regions and different decades provided evidence consistent with this hypothesis. Results from Study 1 revealed that self-reports of several types of antisocial behavior and substance use were significantly more common among Low-So than High-So undergraduate men and women. Study 2 replicated principal findings for both men and women using correlational analyses. In addition, Study 2 yielded a significant relation between low So scores and greater family conflict as well as several gender differences reflecting stronger correlations in men than in women. These findings indicate substantial generality for the relations between socialization and antisocial behavior, especially in men, and are consistent with the use of the So scale to identify subjects who share important characteristics with criminal or psychopathic groups.

Socialization has been referred to as the process through which societal values are internalized and contribute to the values and attitudes of the

individual (Gough, 1948, 1965). Theorists with diverse perspectives have proposed that disruptions in this process play a central role in the development of antisocial behavior and antisocial personality (Goslin, 1973). For example, psychoanalytic writers have argued that a child's failure to internalize healthy parental values results in both superego deficits and antisocial personalities (e.g., Johnson & Szurek, 1952; Kernberg, 1989). Some theorists posit earlier ego deficits and fixations, which also contribute to disruptions of the internalization process (e.g., see Leaff, 1978; Meloy, 1988). Similarly, attachment theorists attribute delinquency to repeated disruptions of the parent-child bond (e.g., Bowlby, 1979).

A variety of different learning perspectives also emphasize failures of socialization. Biologically oriented theorists have argued that inherently poorer conditionability (e.g., Eysenck, 1957) or reduced responsiveness to punishment cues (e.g., Fowles, 1980) leads to poorer learning of parental/societal contingencies and, therefore, to criminal behavior. According to other operant views, children learn antisocial behavior when rewards and punishments are inconsistent or random (Higgins, 1968; Ullmann & Krasner, 1969) or fail to learn parental values because they instead learn interpersonal strategies that circumvent parental punishments (e.g., Buss, 1966; Maher, 1966). Similarly, family systems/communication theorists describe antisocial behavior as a comprehensible response to double-bind communications (e.g., Manne, 1967) or to inconsistent parental behavior (e.g., Minuchin, Montalvo, Guerney, Roseman, & Schumer, 1967).

Though less explicit about socialization, several cognitive developmental theories also relate antisocial behavior to deficiencies in identification and/or internalization (Hoffman, 1988). For example, Kohlberg (1973, 1984) argued that prosocial behavior develops from exposure to models displaying slightly advanced moral reasoning; that is, such models encourage role-taking and active processing, which, in turn, facilitates development of more advanced moral cognitive structures. Thus, lack of exposure to such models can lead to a lack of advanced moral development and, indirectly, to immoral and antisocial behaviors. Others have argued that antisocial behavior results when childrearing practices fail to teach adaptive social cognitive (e.g., problem-solving) skills or fail to promote internalization of norms that dictate empathy for others (Eisenberg, 1988; Hoffman, 1988).

There is some empirical evidence that punitive childrearing practices are related to aggressive behavior in children and adolescents (reviewed by Eisenberg, 1988; see also Vuchinich, Bank, & Patterson, 1992). There is also evidence that some parent-child interactions (e.g., coerciveness) are associated with deficits in children's social cognitive abilities (Mackinnon-Lewis, Lamb, Arbuckle, Baradaran, & Volling, 1992). Moreover, there is evidence that antisocial behavior is correlated with lower levels of moral reasoning (e.g., Jurkovic, 1980; cf. Bartek, Krebs, & Taylor, 1993) and social cognitive deficits (e.g., Dodge, 1986; Dodge, Price, Bachorowski, & Newman, 1990; Spivack & Shure, 1974). Finally, maternal recall of stressful events from a

child's first 4 years of life is associated with less involvement in social relationships among delinquents (Deutsch & Erickson, 1989). Although there is some evidence that abusive childhood experiences lead to increased risk for delinquency and adult criminality (Widom, 1989), there is less evidence relating specific parenting practices and childhood cognitive abilities to disruptions of socialization per se or to adult antisocial behavior or personality.<sup>1</sup>

The most widely used measure of the extent of socialization appears to be Gough's Socialization (So) scale from the California Psychological Inventory (CPI; Gough, 1960; Gough & Bradley, 1992; Schalling, 1978). This 54-item scale with a true/false response format was constructed based on Mead's role theory and Gough's role-taking theory of psychopathy (Gough, 1948; Gough & Peterson, 1952). Test-retest coefficients across one year of .65 to .72 suggest that So scores are relatively stable (Megargee, 1972).

So scores have also received substantial empirical support for their utility. They have been found to predict a variety of behaviors, including cheating, classroom disruptiveness, and role-taking ability (reviewed by Megargee, 1972; Rosen & Schalling, 1972). So scores have also been used in the identification of subtypes within substance abuse disorders (e.g., Cooney, Kadden, & Litt, 1990) and personality disorders (Standage, Smith, & Norman, 1988). Reliable correlations have also been reported between the So scale and personality scales assessing impulsivity and sensation-seeking (Zuckerman, Kuhlman, Thornquist, & Kiers, 1991) and measures of psychopathic personality (Edelmann & Vivian, 1988; Kosson, Smith, & Newman, 1990), suggesting that the scale identifies a consistent personality trait.

Some investigators have suggested a more specific association between undersocialization, a lack of internalization of societal standards, and psychopathy (e.g., Gough, 1948; Schalling, 1978; Trasler, 1978). Psychopathy is a personality disorder associated with impulsivity, poor judgment, and callous exploitation of others (Cleckley, 1988). Psychopaths' lack of conformity to societal role expectations is demonstrated by their being charged with a greater number of violent and nonviolent offenses and with more varied antisocial behavior than other offenders (Kosson et al., 1990). Psychopathic inmates also display a higher prevalence of substance abuse disorder.

---

<sup>1</sup>A variety of approaches to the development of substance abuse also place substantial importance on socialization (e.g., Grichting & Barber, 1989; Perry & Murray, 1985; Tarter & Edwards, 1987). By contrast, it has also been suggested that some individuals develop antisocial behavior as part of a criminal socialization, although such behavior is usually identified separately (e.g., dyssociality, subcultural criminality) and as fundamentally different from psychopathy or antisocial personality (e.g., Cleckley, 1988; Schlesinger, 1980). Still others suggest that antisocial traits in children may interfere with appropriate parenting (e.g., Stott, Marston, & Neill, 1975; Willock, 1986), which may also lead to failures of socialization (see also Quay, 1977). However, available empirical evidence suggests that parental influences on children's behavior usually outweigh children's influences on parents (e.g., Lytton, 1979).

ders than other offenders (Smith & Newman, 1990), and psychopathy has been linked to family events that could disrupt socialization, including absence of the father (e.g., Robins, 1966) and physical abuse (e.g., Ullmann & Krasner, 1969). Thus, it is of interest that, like psychopaths, individuals selected on the basis of low So scores display passive avoidance learning deficits (Nathan, 1980), failures to modulate dominant responses (Howland, Kosson, Patterson, & Newman, 1993), and electrodermal hyporesponsiveness (Raine & Venables, 1984; Waid & Orne, 1982).

In addition, relations between membership in antisocial groups (e.g., delinquents, criminals) and low So scores have been demonstrated in many studies conducted in several different countries (reviewed by Megargee, 1972). For example, recidivists obtain lower So scores on average than first offenders (DeFrancesco & Taylor, 1993; Megargee, 1972). Similarly, alcoholics and other drug abusers obtain lower So scores than nonabuser groups (e.g., Kay, Lyons, Newman, Mankin, & Loeb, 1978; Kurtines, Ball, & Wood, 1978). However, virtually all validation studies have compared So scores of antisocial individuals or substance abusers to those of normal controls. The one exception is a study by Siegmon (1962) who employed undergraduate men and women in Israel as subjects and found that low So scores were related to higher rates of self-reported criminal behavior. However, the nature and severity of criminal behavior was not described. Moreover, this represents an isolated report, which is 30 years old.<sup>2</sup>

Thus, although it is well documented that individuals identified on the basis of antisocial group membership evidence low So scores, it is less clear that individuals selected on the basis of low So scores display real-world antisocial behaviors. For researchers who wish to employ the So scale to study the undersocialized personality, this lack of direct validation evidence represents a serious limitation. Similarly, for those examining a link between undersocialization and psychopathy, the substantial similarities in laboratory behavior noted previously provide some measure of theoretical validation; yet there remains little indication that individuals identified on the basis of undersocialization display real-world behaviors associated with psychopathy.

To address this gap in the empirical literature, two studies were conducted to examine the relation between socialization and self-reported antisocial activities and substance use in a college population. A preliminary analysis of the relation between family conflict and undersocialization is also reported. This latter analysis was of interest because of suggestions that antisocial and delinquent individuals are often physically abused by their parents (McCord, 1979; Widom, 1989). Finally, most studies examining socialization have used male samples exclusively (see review by Gough, 1994). Thus, these studies examined whether relations between socialization

---

<sup>2</sup>One brief report also indicated that the Socialization scale in combination with five other California Psychological Inventory scales did identify the perpetrator of an antisocial act (Lefcourt, 1968).

and antisocial activities, substance use, and family conflict were similar for men and women. The data were collected at two different universities in different decades and different regions of the country.

## STUDY 1

The purpose of Study 1 was to compare self-reports of antisocial activities, substance use, and family conflict in individuals selected on the basis of low and high So scores. It was predicted that low So scorers would report significantly more antisocial activities, substance use, and family conflict than high So scorers.

### Method

**Subjects.** Subjects were selected from a screened sample of 241 undergraduates enrolled in introductory psychology courses at Indiana University who completed the So scale and a background history survey in 1980. Normative data for the So scale were computed separately for men ( $M = 32.57$ ,  $SD = 5.79$ ) and women ( $M = 34.41$ ,  $SD = 5.70$ ). For each gender, low socialization (Low-So) and high socialization (High-So) groups were identified based on extreme thirds. The male groups consisted of 32 subjects who scored below 31 ( $M = 26.28$ ,  $SD = 3.20$ ) and 34 subjects who scored above 34 ( $M = 38.34$ ,  $SD = 3.33$ ). The female groups consisted of 47 subjects who scored below 33 ( $M = 27.89$ ,  $SD = 3.63$ ) and 46 subjects who scored above 38 ( $M = 40.38$ ,  $SD = 2.53$ ). Informed consent was obtained prior to completing the surveys, and subjects received experimental credit for their participation in the study. To increase the likelihood of honest responses, subjects did not provide their names on completed surveys.

**Measure.** The background history survey contained 47 questions assessing antisocial activity, family, school, substance use, military, and work history. The survey was originally derived from an interview used as part of a study of noninstitutionalized psychopaths. For purposes of this study, five questions about involvement in (and consequences of) antisocial activity (e.g., "As a child did you ever engage in stealing?") and nine questions about substance use (e.g., "Have you ever used marijuana?") were of interest. In addition, an item tapping injury to subjects at the hands of their parents was included (i.e., "Were you ever injured, bruised, or hurt by your parents?"). Although this question is subjective in nature, it was hoped that it would provide an approximate index as to participants' perceptions of abusive injury. Subjects were asked to endorse each of these items as *yes/true* or *no/false* as it applied to them. Data were analyzed using Chi-square tests. Because a large number of comparisons were of interest, the level of significance was set at .005.

## Results and Discussion

Table 1 presents the percentages of male and female subjects in each group who endorsed the specific item as *yes* or *true*.

Significant differences between Low-So and High-So groups in the predicted direction were found for stealing and vandalism for men and women. In contrast, none of the three questions tapping consequences for criminal behavior (e.g., served prison time) were statistically significant for men or women, although a substantially higher proportion of the Low-So than High-So men reported experiencing arrest (see Table 1). Thus, although a number of Low-So individuals reported engaging in stealing and vandalism, only a minority reported being arrested and none reported being incarcerated.

Four out of nine substance use items examined were significant in the predicted direction for both men and women. In addition, prior marijuana use and current barbiturate use were significant for women but not men. These nonsignificant findings for men appear to be related to the high endorsement of these items by the High-So subjects, especially for prior marijuana use.

Although an association between socialization and injury by parents was not statistically significant in these data for men or women, a sufficient percentage of Low-So individuals reported a history of being injured by parents to suggest the value of a more thorough examination. This was especially the case for women where the percentage difference between

TABLE 1  
Percent of Individuals in Each Group Endorsing Items as "Yes" or "True"  
by Gender

Item	Men			Women		
	Low-So <sup>a</sup>	High-So <sup>b</sup>	$\chi^2(1)$	Low-So <sup>c</sup>	High-So <sup>d</sup>	$\chi^2(1)$
Stealing before 15	87.5	47.1	10.38**	68.1	15.2	24.56*
Vandalism before 15	84.4	41.2	11.30*	42.6	2.2	19.43*
Arrested before 15	21.9	2.9	3.91	2.1	0.0	<1.00
Arrested after 15	34.4	5.9	6.76	4.3	0.0	<1.00
Served prison time	0.0	2.9	<1.00	0.0	0.0	<1.00
Prior use of heroin	12.5	0.0	2.60	4.5	0.0	<1.00
Prior use of barbiturates	59.4	11.8	14.43*	40.4	2.2	17.95*
Prior use of stimulants	73.5	26.5	15.60*	66.0	11.9	27.46*
Prior use of hallucinogens	59.4	12.5	14.43*	29.8	4.3	8.85**
Prior use of marijuana	93.8	64.7	6.67	87.2	37.0	22.94*
Prior use of alcohol	93.8	79.4	1.79	99.9	84.8	3.54
Current heavy alcohol use	15.6	5.9	<1.00	17.0	0.0	6.54
Current barbiturates use	53.1	11.8	7.76	40.4	0.0	20.95*
Current stimulants use	68.8	20.6	13.63*	57.4	8.7	23.09*
Hit, bruised, or injured by parent	25.0	20.5	<1.00	23.4	6.5	3.95

<sup>a</sup>*n* = 32. <sup>b</sup>*n* = 34. <sup>c</sup>*n* = 47. <sup>d</sup>*n* = 46.

\**p* < .001. \*\**p* < .005.

Low-So and High-So groups appeared pronounced but nevertheless remained nonsignificant. An extended examination of this issue was undertaken in Study 2.

## STUDY 2

The purpose of Study 2 was to replicate the findings of Study 1 using a sample located in a different geographical region and in a different decade. In addition, this study was designed to extend the findings of Study 1 by: (a) assessing the degree to which individuals reported engaging in antisocial activities, rather than assessing these activities dichotomously; (b) including the full range of So scores in analyses, rather than just High-So and Low-So groups; and (c) examining a wider range of family conflict variables in order to assess several different types of abusive interactions. It was predicted that undersocialization scores would be significantly related to higher reports of antisocial activities, substance abuse, and family conflict.

### Method

*Subjects.* Subjects were undergraduates (107 men, 199 women) enrolled in introductory psychology courses at the University of North Carolina at Greensboro who completed the So scale and a background history survey in 1992. The sample was predominantly White, with 93.5% of the men and 76.0% of the women endorsing this category, and nearly all remaining subjects in each gender reporting that they were Black. Subjects' reported ages ranged from 15 to 58, with average ages of 20.78 ( $SD = 3.87$ ) for men and 19.55 ( $SD = 4.75$ ) for women. So scores ranged from 16 to 49 ( $M = 32.99$ ,  $SD = 6.56$ ) for men and from 20 to 49 ( $M = 36.63$ ,  $SD = 5.97$ ) for women. Informed consent was obtained prior to completing the surveys, and subjects received credit toward their course grade for their participation in the study. To increase the likelihood of honest responses, as in Study 1, subjects did not provide their names on completed surveys.

*Measure.* The background history survey contained 27 questions of which 17 pertained to involvement in antisocial activity, substance use, and family conflict. In addition to an item addressing injury at the hands of parents, several other items about family conflict were included. More specifically, subjects indicated how well they "got along" with their parents, how much contact they had with their parents as a child on evenings and weekends, and whether their parents yelled/screamed at or criticized them.

The background history survey utilized a forced-choice response format. Response choices for antisocial activity items (i.e., stealing, vandalism, physical fights, arrests) were *None*, *1 time*, *2 to 5 times*, and *More than 5 times*. Response choices for items addressing substance use and parental

yelling/screaming and criticism were *Never*, *Occasionally*, and *Frequently*. Because substance use items assessed the extent to which subjects had ever used the different substances, an endorsement of *Frequently* did not necessarily describe contemporaneous substance use. The injury at the hands of their parents item was endorsed as either *yes* or *no*. Response choices for quality of relationship with parents were *Got along fine*, *Ups and downs but no major difficulties*, and *Major difficulties*. Finally, response choices for amount of contact with parents as a child were *Hardly ever*, *Occasional*, and *Frequent*. Data were analyzed using Spearman rank-order correlations. Because of the number of relations assessed, level of significance was set at .005.

## Results and Discussion

Table 2 presents correlations between So scores and antisocial activities, substance use, and family conflict factors.

As predicted, So scores were significantly correlated with reported involvement with two of four antisocial activities, four of seven substances, and four of seven types of family conflict for both men and women. In addition, the relations between So scores and vandalism and physical fights as well as a history of barbiturate and hallucinogen use were all highly significant for men but not for women. Thus, among men, significant correlations were obtained for all four antisocial activity and six of seven substance use domains assessed. On the other hand, conflict with mother and criticism by parents were significantly related to socialization scores in women but not men. Thus, among women, significant correlations were obtained for six of seven family conflict items.

To examine reliability of gender differences in the magnitudes of correlations, correlations were converted to  $Z_s$  and analyzed using Fisher  $z$  tests. These analyses revealed that correlations were significantly greater for men than women for number of arrests ( $z = 2.95$ ,  $p = .002$ ), hallucinogen use ( $z = 2.60$ ,  $p = .005$ ), and marijuana use ( $z = 2.84$ ,  $p = .002$ ). Although short of the level of significance established for the study (i.e., .005), several other analyses suggested greater magnitudes of correlations for men than women: stealing ( $z = 2.07$ ,  $p = .02$ ), vandalism ( $z = 1.81$ ,  $p = .04$ ), barbiturate use ( $z = 2.09$ ,  $p = .02$ ), cocaine use ( $z = 1.87$ ,  $p = .03$ ), and alcohol use ( $z = 1.63$ ,  $p = .05$ ). Thus, there appear to be differences in the way some personality-behavior relations are expressed in men and women (see also Widom, 1984).

Several findings from Study 1 were replicated in Study 2. For men, similar results were obtained for stealing, vandalism, and histories of heroin, barbiturate, stimulant, and hallucinogen use. For women, similar findings in both studies were found for stealing, number of arrests, and histories of heroin, stimulant, and marijuana use.

On the other hand, some findings from Study 1 were not replicated in Study 2. For men, the associations with number of arrests, histories of

TABLE 2  
Correlations Between So Scores and Antisocial Behaviors, Substance Abuse,  
and Family Factors by Gender

<i>So Scores</i>	<i>Men<sup>a</sup></i>	<i>Women<sup>b</sup></i>
Extent engaged in stealing	-.58*	-.39*
Extent engaged in vandalism	-.31**	-.10
Number of physical fights	-.33*	-.21**
Number of arrests	-.42*	-.09
Prior use of heroin	-.14	-
Prior use of barbiturates	-.39*	-.15
Prior use of cocaine	-.42*	-.21**
Prior use of stimulants	-.31**	-.21**
Prior use of hallucinogens	-.45*	-.16
Prior use of marijuana	-.57*	-.29*
Prior use of alcohol	-.51*	-.35*
Conflict with mother	-.26	-.35*
Conflict with father	-.43*	-.34*
Amount yelled at by parents	-.41*	-.32*
Amount criticized by parents	-.30	-.42*
Hit, bruised, or injured by parent	-.29**	-.25*
Contact with parents as a child	+.28**	+.31*

<sup>a</sup>*n* = 107. <sup>b</sup>*n* = 199.

\**p* < .001. \*\**p* < .005.

marijuana and alcohol use, and being hit, bruised, or injured by parents were significant in Study 2 but not Study 1. For women, history of alcohol use and being hit, bruised, or injured by a parent were significant in Study 2 but not Study 1. In addition, for women, vandalism and histories of barbiturate and hallucinogen use were significant in Study 1 but not Study 2. A direct comparison of discrepant findings between the two studies was not possible because of differences in item format and analyses. However, phi coefficients were computed for relations examined in Study 1 to assess whether discrepancies could be attributed to differences in sample size (Rosenthal & Rosnow, 1991). Comparing phi coefficients to the correlations in Study 2 suggested that the greater power of Study 2 could account for only one discrepant finding (i.e., hit, bruised, or injured by a parent for women). The reasons for the other discrepancies remain unclear.<sup>3</sup>

<sup>3</sup>Study 1 phi coefficients for associations not significant in Study 1 were: arrested before 15 for men = -.24; arrested after 15 for men = -.32; use of marijuana for men = -.32; use of alcohol for men = -.17; hit, bruised, or injured by parent for men = .00; hit, bruised, or injured by parent for women = -.21; and use of alcohol for women = -.20. Study 1 phi coefficients for findings not significant in Study 2 were vandalism for women = -.46, use of barbiturates for women = -.44, and use of hallucinogens for women = -.31. Because these phi coefficients are based on extreme groups, they may overestimate Study 1 effect sizes. Thus, these latter discrepancies are not interpreted.

Inspection of the So scale items themselves suggested that some items resembled background history survey items, raising the possibility that some correlations could have been spuriously inflated. To address this possibility, scores on So items that were judged to be similar to survey items were subtracted from So total scores. Corrected So scores were then correlated with the factors from the survey.<sup>4</sup>

The re-analyses for antisocial activity and alcohol use evinced relatively small reductions in the magnitude of the correlations observed. The greatest reductions were found in women for stealing (from  $-.39$  to  $-.34$ ) and alcohol use (from  $-.35$  to  $-.30$ ). However, in both instances (as in other re-analyses of these domains), levels of significance remained similar to those presented in Table 2. Therefore, it appears that significant relations obtained in these domains are not due to item redundancy.

Re-analyses of family conflict items revealed considerably more variability. In a few cases the reductions in magnitude appeared quite small (e.g., for men the correlation between socialization and being hit, bruised, or injured by parents dropped from  $-.29$  to  $-.26$ ). However, in the majority of instances, the reductions in magnitude appeared moderate to large (e.g., for women the correlation between socialization and being criticized by parents dropped from  $-.41$  to  $-.25$ ). Thus, some of the correlations between So scores and family conflict presented in Table 2 may be inflated by similarity in the item content on the So scale and background history survey, even though no So scale items refer explicitly to abusive interactions. On the other hand, this finding is also consistent with cluster analyses of the So scale that identify a homogeneous set of So items related to family stability and harmony (Stein, Gough, & Sarbin, 1966) and satisfaction with childhood home life (Standage et al., 1988). In short, family conflict may serve a central role in the socialization construct itself. It also remains possible that a more fine-grained assessment of abusive interactions would reveal correlations that survive the removal of family conflict items.

## GENERAL DISCUSSION

The results of these studies provide additional support for the construct validity of the So scale and further suggest that the association between undersocialization and antisocial activity is robust across different time periods, geographical regions, and genders. Not only do antisocial individuals tend to evidence low socialization levels, but individuals identified as low

---

<sup>4</sup>One So item was removed when vandalism, fighting, and number of arrests were re-examined. Two So items were removed when stealing and alcohol use were re-examined. Eight So items were removed when the family conflict factors were re-examined. The So scale contains no items addressing use of substances other than alcohol.

in socialization (i.e., having low So scores) tend to report engaging in more antisocial activities than individuals identified as high in socialization.

That similar findings were obtained in two different samples and using different self-report questionnaire formats and different analytic techniques increases our confidence in the reliability of these associations. The findings of greater involvement in stealing, stimulant use, and marijuana use for Low-So women provide some evidence for the use of the So scale in women; however, findings for men were substantially stronger. Moreover, the replicability and consistency of findings within these domains for male participants parallels the data on laboratory behavior, which primarily involves male subjects. In short, it appears that men with low So scores resemble psychopathic and criminal populations with respect to their greater involvement in antisocial behavior and use of psychoactive substances. Thus, although further research is warranted, for investigators who wish to study populations analogous to antisocial personalities or criminals, selecting college students on the basis of low So scale scores appears to represent a reasonable strategy.

However, two limitations of our studies should be noted. First, the use of self-report measures of antisocial and substance use activities permits the possible interpretation that undersocialized college students are not truly engaging in more of these behaviors but simply more willing to report a wide variety of problems than their more socialized counterparts. A review of CPI scale intercorrelations reveals that although So correlates with some scales (e.g., with Self-Control,  $r = .45$  to  $.52$ ), So scores are independent of several other scales (e.g., with Self-Acceptance,  $r = -.03$  to  $-.05$ ; with Dominance,  $r = .11$ ; Megargee, 1972). Thus, low So scores are not associated with a general inclination to report a wide variety of problems.

On the other hand, it remains possible that low So scores are associated with less sensitivity to social desirability, which may lead to greater willingness to acknowledge participation in those activities of which others may disapprove. Indeed, reports of correlations between the So scale and the Marlowe-Crowne Social Desirability scale (M-CSDS) range from small and nonsignificant (.15) to moderate (.27; Lichtenstein & Bryan, 1966). Nevertheless, there is increasing evidence that social desirability scales provide more information about personality than about response styles (e.g., McCrae & Costa, 1983; Weinberger, Schwartz, & Davidson, 1979). For example, Sincoff (1992) argues that reports of less psychopathology by individuals with high scores on the M-CSDS and low anxiety scores reflect a repressive (defensive) coping style rather than a response bias. Thus, although some individuals with high So scores may underreport involvement in antisocial activities because they are deceiving themselves regarding their involvement, this possibility has less clear-cut implications than the simpler construct of response bias.

Moreover, the self-reported involvement in activities such as those presented here yield lifetime prevalence estimates for these behaviors that are

remarkably consistent with relevant epidemiological surveys. For example, DeMore, Fisher, and Baron (1988) suggest that approximately 63% of men and 14% of women report previous involvement in vandalism, compared with our estimates of 62% and 23% (Study 1) and 64% and 24% (Study 2), respectively. Similarly, lifetime prevalence estimates of stimulant use among college students suggest that 30% had used stimulants in 1980 versus 11% in 1992 (Johnston, Bachman, & O'Malley, 1993), whereas our estimates for these years were 43% and 12%. Because most epidemiological surveys reviewed found relied upon self-report data, it remains possible that such surveys also reflect underestimates of participation in these activities. Nevertheless, other investigators have argued that, under conditions that maximize confidentiality, self-report questionnaires regarding substance use appear to be relatively valid (e.g., Johnston, O'Malley, & Bachman, 1987). Finally, where both interview and self-report data were available, both methods revealed similar estimates of involvement in these activities (cf. Johnston et al., 1987; Kandel, Murphy, & Karus, 1985). A second limitation concerns the domain of behavior under investigation in this study. Recent investigations of psychopathy indicate that at least two correlated dimensions underlie psychopathy ratings (Harpur, Hare, & Hakstian, 1989). One dimension, described as reflecting an antisocial, impulsive, and unstable lifestyle, is consistently correlated with self-report measures, including the So scale. This dimension tends to predict a variety of real-world problems, including violent behavior, family background variables, and educational achievement. Another dimension, identified as callous, remorseless exploitation of others, appears less correlated with these real-world behaviors than the first dimension but as highly correlated with some laboratory deficits (e.g., Harpur et al., 1989; Kosson, Smith, & Newman, 1989). However, So scale scores do not appear to correlate with this second dimension. Thus, personality measures like the So scale may prove better at predicting substance abuse, criminal behavior, and family conflict than at predicting emotional or motivational deficits associated with psychopathic personalities. For these latter purposes, it may be possible to improve the analogy between undersocialization and psychopathy by incorporating additional measures more closely related to callous and exploitative interpersonal behavior.<sup>5</sup>

---

<sup>5</sup>Given Harpur and colleagues' (1989) report that clinicians' prototypicality ratings of Narcissistic Personality Disorder symptoms were highly correlated with scores on the interpersonal exploitation dimension of psychopathy, additional analyses attempted to improve prediction of antisocial behaviors and family conflict using scores on the Narcissistic Personality Inventory (NPI; Raskin and Hall, 1979). In the Study Two sample, neither NPI scores nor the NPI  $\times$  So interaction were significantly correlated with the dependent variables reported here. It remains possible that clinicians' ratings of narcissistic traits would contribute to improved prediction of these variables, or that NPI scores would contribute to prediction of some laboratory deficits.

## ACKNOWLEDGMENTS

Preparation of this article was supported in part by Grant MH49111 from the National Institute of Mental Health and Grant 555611 from the Research Council of the University of North Carolina at Greensboro to the first author.

We wish to thank Stuart Nathan for collecting the data used in Study 1 and Harrison Gough for comments on an earlier draft of this article.

## REFERENCES

- Bartek, S. E., Krebs, D. L., & Taylor, M. C. (1993). Coping, defending, and the relations between moral judgment and moral behavior in prostitutes and other female juvenile delinquents. *Journal of Abnormal Psychology, 102*, 66-73.
- Bowlby, J. (1979). *The making and breaking of affectional bonds*. London: Tavistock.
- Buss, A. H. (1966). *Psychopathology*. New York: Wiley.
- Cleckley, H. (1988). *The mask of sanity* (5th ed.). St. Louis: Mosby.
- Cooney, N. L., Kadden, R. M., & Litt, M. D. (1990). A comparison of methods for assessing sociopathy in male and female alcoholics. *Journal of Studies on Alcohol, 51*, 42-48.
- DeFrancesco, J. J., & Taylor, J. (1993). A validation note on the revised Socialization Scale of the California Psychological Inventory. *Journal of Psychopathology and Behavioral Assessment, 15*, 53-56.
- DeMore, S. W., Fisher, J. D., & Baron, R. M. (1988). The equity-control model as a predictor of vandalism among college students. *Journal of Applied Social Psychology, 18*, 80-91.
- Deutsch, L. J., & Erickson, M. T. (1989). Early life events as discriminators of socialized and undersocialized delinquents. *Journal of Abnormal Child Psychology, 17*, 541-551.
- Dodge, K. A. (1986). A social information processing model of social competence in children. In M. Perlmutter (Ed.), *Minnesota symposium on child psychology* (Vol. 18, pp. 77-125). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Dodge, K. A., Price, J. M., Bachorowski, J., & Newman, J. P. (1990). Hostile attributional biases in severely aggressive adolescents. *Journal of Abnormal Psychology, 99*, 385-392.
- Edelmann, R. J., & Vivian, S. E. (1988). Further analysis of the Social Psychopathy scale. *Personality & Individual Differences, 9*, 581-587.
- Eisenberg, N. (1988). The development of prosocial and aggressive behavior. In M. H. Bornstein & M. E. Lamb (Eds.), *Developmental psychology: An advanced textbook* (pp. 461-495). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Eysenck, H. J. (1957). *The dynamics of anxiety and hysteria*. New York: Praeger.
- Fowles, D. C. (1980). The three-arousal model: Implications of Gray's two-factor learning theory for heart rate, electrodermal activity, and psychopathy. *Psychophysiology, 17*, 87-104.
- Goslin, D. A. (Ed.). (1973). *Handbook of socialization theory and research*. Chicago: Rand McNally.
- Gough, H. A. (1948). A sociological theory of psychopathy. *American Journal of Sociology, 53*, 359-366.
- Gough, H. A. (1960). Theory and measurement of socialization. *Journal of Consulting Psychology, 24*, 23-30.
- Gough, H. G. (1965). Conceptual analysis of psychological test scores and other diagnostic variables. *Journal of Abnormal Psychology, 70*, 294-302.
- Gough, H. G. (1994). Theory, development, and interpretation of the CPI Socialization scale. *Psychological Reports, Monograph Supplement 1-V75, 75*, 651-700.
- Gough, H. G., & Bradley, P. (1992). Delinquent and criminal behavior as assessed by the revised

- California Psychological Inventory. *Journal of Clinical Psychology*, 48, 298–308.
- Grichting, W. L., & Barber, J. G. (1989). The impact of quality of family life on drug consumption. *International Journal of the Addictions*, 24, 963–971.
- Harpur, T. J., Hare, R. D., & Hakstian, A. R. (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 1, 6–17.
- Higgins, J. (1968). Inconsistent socialization. *Psychological Reports*, 23, 303–336.
- Hoffman, M. L. (1988). Moral development. In M. H. Bornstein & M. E. Lamb (Eds.), *Developmental psychology: An advanced textbook* (pp. 497–548). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Howland, E. W., Kosson, D. S., Patterson, C. M., & Newman, J. P. (1993). Altering a dominant response: Performance of psychopaths and low-socialization college students on a cued reaction time task. *Journal of Abnormal Psychology*, 102, 379–387.
- Johnson, A. D., & Szurek, S. A. (1952). The genesis of antisocial acting out in children and adults. *Psychoanalytic Quarterly*, 21, 323–343.
- Johnston, L. D., Bachman, J. G., & O'Malley (1993, July 15). Decline in drug use halts among American college students and among young adults generally, U-M survey shows. LSD continues to rise [News Release]. (Available from the News and Information Services Department, University of Michigan)
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1987). *National trends in drug use and related factors among American high school students and young adults, 1975–1986*. Rockville, MD: National Institute on Drug Abuse (also DHHS Publication No. ADM 87–1535. Washington, DC: Government Printing Office).
- Jurkovic, G. (1980). The juvenile delinquent as a moral philosopher: A structural–developmental perspective. *Psychological Bulletin*, 88, 709–727.
- Kandel, D. B., Murphy, D., & Karus, D. (1985). Cocaine use in young adulthood: Patterns of use and psychosocial correlates. In N. J. Kozel & E. H. Adams (Eds.), *Cocaine use in America: Epidemiologic and clinical perspectives* (NIDA Research Monograph No. 61, pp. 76–110). Rockville, MD: National Institute on Drug Abuse.
- Kay, E. J., Lyons, A., Newman, W., Mankin, D., & Loeb, R. C. (1978). A longitudinal study of the personality correlates of marijuana use. *Journal of Consulting and Clinical Psychology*, 46, 470–477.
- Kernberg, O. (1989). Psychoanalytic classification of character pathology. In R. F. Lax (Ed.), *Essential papers on character neurosis and treatment* (pp. 191–210). New York: New York University Press.
- Kohlberg, L. (1973). Stage and sequence: The cognitive–developmental approach to socialization. In D. A. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 347–480). Chicago: Rand McNally.
- Kohlberg, L. (Ed.). (1984). *Essays on moral development: Vol 1. The philosophy of moral development*. New York: Harper & Row.
- Kosson, D. S., Smith, S. S., & Newman, J. P. (1989, June). *Applicability of the psychopathy construct to Black male inmates: A preliminary investigation*. Paper presented at the meeting of the International Society for the Study of Individual Differences, Heidelberg, West Germany.
- Kosson, D. S., Smith, S. S., & Newman, J. P. (1990). Evaluating the construct validity of psychopathy in black and white inmates: Three preliminary studies. *Journal of Abnormal Psychology*, 99, 250–259.
- Kurtines, W. M., Ball, L. R., & Wood, G. H. (1978). Personality characteristics of long-term recovered alcoholics: A comparative analysis. *Journal of Consulting and Clinical Psychology*, 46, 971–977.
- Leaff, L. A. (1978). The antisocial personality: Psychodynamic implications. In W. H. Reid (Ed.), *The psychopath: A comprehensive study of antisocial disorders and behavior* (pp.

- 79-117). New York: Brunner/Mazel.
- Lefcourt, H. M. (1968). Serendipitous validity study of Gough's social maturity index. *Journal of Consulting and Clinical Psychology, 32*, 85-86.
- Lichtenstein, E., & Bryan, J. H. (1966). CPI correlates of the need for approval. *Journal of Clinical Psychology, 22*, 453-455.
- Lytton, H. (1979). Disciplinary encounters between young boys and their mothers and fathers: Is there a contingency system? *Developmental Psychology, 15*, 256-268.
- Mackinnon-Lewis, C., Lamb, M. E., Arbuckle, B., Baradaran, L. P., & Volling, B. L. (1992). The relationship between biased maternal and filial attributions and the aggressiveness of their interactions. *Development & Psychopathology, 4*, 403-415.
- Maher, B. A. (1966). *Principles of psychopathology*. New York: McGraw-Hill.
- Manne, S. H. (1967). A communication theory of sociopathic personality. *American Journal of Psychotherapy, 21*, 797-807.
- McCord, J. (1979). Some child-rearing antecedents of criminal behavior in adult men. *Journal of Personality and Social Psychology, 37*, 1477-1486.
- McCrae, R. R., & Costa, P. T., Jr. (1983). Social desirability scales: More substance than style. *Journal of Consulting and Clinical Psychology, 51*, 882-888.
- Megargee, E. I. (1972). *The California Psychological Inventory handbook*. San Francisco: Jossey-Bass.
- Meloy, J. R. (1988). *The psychopathic mind: Origins, dynamics and treatment*. Northvale, NJ: Aronson.
- Minuchin, S., Montalvo, B., Guerney, B., Jr., Roseman, B., & Schumer, F. (1967). *Families of slums: An exploration of their structure and treatment*. New York: Basic Books.
- Nathan, S. (1980). [Passive avoidance learning in high- and low-socialized college students]. Unpublished raw data.
- Perry, C. L., & Murray, D. M. (1985). The prevention of adolescent drug abuse: Implications from etiological, developmental, behavioral, and environmental models. *Journal of Primary Prevention, 6*, 31-52.
- Quay, H. (1977). Psychopathic behavior: Reflections on its nature, origins, and treatment. In I. Uzgiris & F. Weizman (Eds.), *The structuring of experience* (pp. 371-383). New York: Plenum.
- Raine, A., & Venables, P. H. (1984). Electrodermal nonresponding, antisocial behavior, and schizoid tendencies in adolescents. *Psychophysiology, 21*, 424-433.
- Raskin, R. N., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports, 45*, 590.
- Robins, L. N. (1966). *Deviant children grown up*. Baltimore: Williams & Wilkins.
- Rosen, A., & Schalling, D. (1972). On the validity of the California Psychological Inventory Socialization scale: A multivariate approach. *Journal of Consulting and Clinical Psychology, 47*, 757-765.
- Rosenthal, R., & Rosnow, R. L. (1991). *Essentials of behavioral research: Methods and data analysis*. New York: McGraw-Hill.
- Schalling, D. (1978). Psychopathy-related personality variables and the psychophysiology of socialization. In R. D. Hare & D. Schalling (Eds.), *Psychopathic behaviour: Approaches to research* (pp. 85-105). New York: Wiley.
- Schlesinger, L. (1980). Distinctions between psychopathic, sociopathic and anti-social personality disorders. *Psychological Reports, 47*, 15-21.
- Siegmom, A. W. (1962). Personality variables associated with admitted criminal behavior. *Journal of Consulting Psychology, 26*, 199.
- Sincoff, J. B. (1992). Ambivalence and defense: Effects of a repressive style on normal adolescents' and young adults' mixed feelings. *Journal of Abnormal Psychology, 101*, 251-256.
- Smith, S. S., & Newman, J. P. (1990). Alcohol and drug abuse-dependence disorders in psycho-

- pathic and nonpsychopathic criminal offenders. *Journal of Abnormal Psychology*, 99, 430-439.
- Spivack, G., & Shure, M. B. (1974). *Social adjustment of young children: A cognitive approach to solving real life problems*. San Francisco: Jossey-Bass.
- Standage, K., Smith, D., & Norman, R. (1988). A classification of respondents to the CPI Socialization scale: Associations with psychiatric diagnosis and implications for research. *Personality and Individual Differences*, 9, 231-236.
- Stein, K. B., Gough, H. G., & Sarbin, T. R. (1966). The dimensionality of the CPI Socialization scale and an empirically derived typology among delinquent and nondelinquent boys. *Multivariate Behavioral Research*, 1, 197-208.
- Stott, D. H., Marston, N. C., & Neill, S. J. (1975). *Taxonomy of behavior disturbance*. London: University of London Press.
- Tarter, R. E., & Edwards, K. L. (1987). Vulnerability to alcohol and drug abuse: A behavior-genetic view. *Journal of Drug Issues*, 17, 67-81.
- Trasler, G. (1978). Relations between psychopathy and persistent criminality: Methodological and theoretical issues. In R. D. Hare & D. Schalling (Eds.), *Psychopathic behaviour: Approaches to research* (pp. 273-298). New York: Wiley.
- Ullmann, L. P., & Krasner, L. (1969). *A psychological approach to abnormal behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Vuchinich, S., Bank, L., & Patterson, G. R. (1992). Parenting, peers, and the stability of antisocial behavior in preadolescent boys. *Developmental Psychology*, 28, 510-521.
- Waid, W. M., & Orne, M. T. (1982). Reduced electrodermal response to conflict, failure to inhibit dominant behaviors, and delinquency proneness. *Journal of Personality and Social Psychology*, 43, 769-774.
- Weinberger, D., Schwartz, G., & Davidson, R. (1979). Low-anxious, high-anxious, and repressive coping styles: Psychometric patterns and behavioral and physiological responses to stress. *Journal of Abnormal Psychology*, 88, 369-380.
- Widom, C. S. (1984). Sex roles, criminality, and psychopathology. In C. S. Widom (Ed.), *Sex roles and psychopathology* (pp. 183-217). New York: Plenum.
- Widom, C. S. (1989). The cycle of violence. *Science*, 244, 160-166.
- Willock, B. (1986). Narcissistic vulnerability in the hyper-aggressive child: The disregarded (unloved, uncared-for) self. *Psychoanalytic Psychology*, 3, 59-80.
- Zuckerman, M., Kuhlman, D. M., Thornquist, M., & Kiers, H. (1991). Five (or three) robust questionnaire scale factors of personality without culture. *Personality and Individual Differences*, 12, 929-941.

David S. Kosson  
 Finch University of Health Sciences  
 The Chicago Medical School  
 3333 Green Bay Road  
 North Chicago, IL 60064

Received November 22, 1993