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THEORY, DEVELOPMENT, AND INTERPRETATION OF THE CPI SOCIALIZATION SCALE[1]

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Summary.—The socialization (So) scale of the California Psychological Inventory is based partly on a role-taking or perspective-taking theory of social deviance and partly on the pragmatics of differentiating between more socialized and less socialized individuals. The theory, history, and current applications of the scale are reviewed, relationships to other scales and measures are examined, and the validity of the scale in arraying 69 male and 40 female samples along a putative continuum of socialization is evaluated. Finally, from these findings and from analyses of observers' adjectival and Q-sort descriptions significantly related to the scale, an interpretive psychology of the measure is propounded.

Contents

Theory, Construction, and Validation

The Socialization (So) scale of the California Psychological Inventory (CPI; Gough, 1957, 1987) has two roots. One is found in an interactional theory of psychopathy first introduced more than 40 years ago (Gough, 1948). The other is found in clinical lore and commonsense observations about the beliefs and attitudes of sociopathic individuals.

The first version of the So scale (Gough & Peterson, 1952) included in its experimental form approximately 200 items drawn from these two sources. About half of these items came from the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943), and about half were written with interpersonal and role-taking considerations in mind. Examples of role- or perspective-taking items are "Before I do something I try to consider how my friends will react to it" and "I often think about how I look and what impression I am making upon others." When the scale was first introduced it was called "Delinquency" and scored in the direction of

[1]The author thanks Pamela Bradley and Kevin Lanning for carrying out computer analyses reported in Tables 1 to 4. The author, Professor of Psychology, Emeritus, at the University of California, Berkeley, also asks readers to send requests for reprints or other information to Harrison G. Gough, Ph.D., PO Box 909, Pebble Beach, CA 93953.

wayward behavior. At that time, the two items just cited were keyed for a "false" response. Since 1957 the scale has been called "Socialization" and is scored in the direction of prosocial behavior. Accordingly, the two items are now keyed for a "true" response.

Examples of items suggested by observational criteria are "If the pay was right I would like to travel with a circus or carnival" (false), "I would never play cards (poker) with a stranger" (true), and "I often act on the spur of the moment without stopping to think" (false) as scored for socialization.

To develop the first version of the scale, the experimental items were administered to five male and four female samples, specifically, (1) 45 boys from a high school in a small community, (2) 125 boys from two urban high schools, (3) 19 boys nominated by principals as behavior problems in these three schools, (4) 243 young delinquents from a state program, and (5) 698 male reformatory inmates. The female samples included (1) 44 girls from the small community high school, (2) 134 girls from the two urban high schools, (3) from the three schools 19 girls who were nominated as behavior problems, and (4) 109 reformatory inmates.

An item analysis across the three categories of nondelinquents, behavior problems, and delinquents identified 64 that had good discriminations for both sexes. These 64 items constituted the first version of the scale. Means on this scale showed the desired rankings for the three categories. For females, the means were 18.19 for nondelinquents, 22.00 for behavior problems, and 30.26 for delinquents. For males, the corresponding means were 21.65, 28.95, and 29.98. Cross-validation of the 64-item Delinquency scale (De) on 99 U.S. Army stockade prisoners versus 1,092 recruits produced means of 19.43 for the recruits and 30.49 for the prisoners, after adjusting the scores on the short form of the De scale that was used to the full length of 64 items. The t test for the difference was 25.25 ($p < .001$), equivalent to a point-biserial correlation of .59.

A second cross-validation of the initial De scale pitted 144 repeat offenders from a stockade at a different military base against 209 first offenders. These prisoners were given a 58-item version of the scale. After prorating to 64-item length, means of 28.40 for the first offenders and 31.11 for the recidivists were obtained. The t test for the difference was 3.34 ($p < .01$), equivalent to a point-biserial correlation of .18. An item analysis was also carried out in this pair of samples to see if any would fail to differentiate. Ten marginal or reversed items were found and dropped from the scale. This left 54 items, and it was this 54-item version that was scored in the 1957 edition of the CPI. As mentioned above, when this was done the direction of scoring was reversed to indicate pronormative behavior, and the name of the scale was changed to "Socialization."

Using the 54-item So scale, a new examination for first offenders versus recidivists (Peterson, Quay, & Anderson, 1959) obtained means of 34.39 for

45 first offenders in a training school for boys and 30.82 for 190 recidivists. The t test for this comparison was 4.31 ($p < .01$), equivalent to a point-biserial correlation of .27. In an institution for boys (Donald, 1955), 111 with zero or one previous commitments were compared with 119 with two or more. On the 54-item So scale the former sample had a mean of 29.72 and the latter a mean of 25.95. The t test for this difference was 4.55 ($p < .01$), equivalent to a point-biserial correlation of .29.

The two studies just cited brought the first information on ethnic differences. In both reports, differences on the So scale between black and white subsamples were statistically insignificant. Donald, for example, found means of 29.39 for his 56 black inmates and 27.75 for his 174 white inmates. Donald also looked at age of first commitment, contrasting those whose first commitment was at age 15 or below with those who were first committed at age 16 or above. The means on So were 24.76 for the former group and 29.93 for the latter. The t test for this difference was 6.41 ($p < .01$), equivalent to a point-biserial correlation of .38.

An important series of papers in the 1950s and early 1960s (Dinitz, Reckless, & Kay, 1958; Dinitz, Scarpitti, & Reckless, 1962; Reckless, Dinitz, & Kay, 1957; Reckless, Dinitz, & Murray, 1956; Scarpitti, Murray, Dinitz, & Reckless, 1960) followed the lives of a sample of "good" boys growing up in high-delinquency environments. From schools in these areas, the researchers had teachers nominate boys who appeared to be "insulated" against delinquency, and whose behavior suggested that they were not giving in to the negative social pressures. These nominations were checked against social service and police records, and 125 boys were identified as having minimal vulnerability. The teachers also nominated 101 boys who appeared to be prone to delinquent behavior in the future. Because of reading difficulties among these grade school boys, not all of the items in the So scale could be used, and testing was done orally, i.e., items were read aloud by the examiner and answered by the children. Prorating of the scores to 54-item length on the So scale produced means of 39.43 for the less vulnerable boys and 31.40 for the more vulnerable. The t test for the difference was 8.34 ($p < .01$). A point-biserial correlation cannot be computed because of the unknown number of boys in the middle or unnominated group. In the follow-up inquiries several years later, the boys identified as resistant to delinquency were almost completely free of any kind of social deviancy.

One paper in the 1950s (Holland, 1959) presented data for persons scoring at the high end of the So scale. Holland's sample included 743 Merit Scholars and 578 Certificate of Merit winners, drawn from 7,500 finalists in the testing of 166,000 high school seniors for the National Merit Scholarship Corporation. The 957 boys had an So scale mean of 38.85, and the 364 girls a mean of 40.06.

Holland was interested in first-year college grades for these students and compared the predictive validity of the CPI scales with those of the Scholastic Aptitude Test (SAT). For the SAT Verbal score, correlations of .12 and .04 were found for subsamples of 476 and 481 boys. SAT Verbal scores for subsamples of 185 and 179 girls had correlations of .26 and .06 with grades. For SAT Mathematical, the two correlations for boys were .17 and .15, and for girls the correlations were .15 and .00. The corresponding correlations with first-year grades for the So scale were .22 and .29 for boys and .22 and .27 for girls.

When the predictive validity of the So scale was examined for variations among the seven colleges these 1,261 students attended, the coefficients ranged from a low of .23 to a high of .57. Similarly consistent results were obtained when grades in scientific and nonscientific subjects were analyzed separately. As later studies showed (to be discussed below), the So scale is ordinarily not a good predictor of school achievement for college students in general. However, for high-ability students the So scale appears to pick up some kind of self-discipline in the use of talent that enhances performance in structured environments.

At the end of the 1950s, an attempt was made to summarize findings such as those reviewed above and to develop a psychological formulation of the scale's implications (Gough, 1960). A basic notion was that scores on the So scale for both individuals and groups, arrayed from highest to lowest, should correspond to a sociological continuum going from persons of exemplary probity and rectitude at one pole, through persons of ordinary norm-observing propensities, to persons of frankly errant and rule-violating dispositions at the other pole. Socialization can then be seen as the internalization of whatever values, systems of control, and adaptive mechanisms may be required for compliance with this normative vector, and scores on the So scale can be conceptualized as an index or partial index of the extent to which these prosocial internalizations have occurred.

A first array of evidence for this hypothesis included 25 samples of males, 18 classified as "more socialized" in this sociological sense and seven as "less socialized." For females, there were nine "more socialized" and seven "less socialized" samples. Examples from the more socialized category were college and high school students, skilled workers, business executives, and nurses. Examples from the less socialized category were prison inmates, county jail inmates, and students nominated as disciplinary problems.

For males, the mean So score for 9,000 more socialized persons was 36.74, standard deviation 5.61, and for the 1,295 less socialized persons the figures were 27.98 and 6.08. The t test for the difference was 51.70 ($p <$ .01), equivalent to a point-biserial correlation of .45. The 9,776 more socialized women had a mean of 39.46, standard deviation 5.30, and the 784 less

socialized had a mean of 29.94, standard deviation 6.89. The t test for the difference was 47.25 ($p < .01$), equivalent to a point-biserial correlation of .42. For both sexes, the highest mean on the So scale among the less socialized samples was lower than the lowest mean among the more socialized samples.

Perspective-taking

Up to this point, the data presented have dealt with differences on the So scale between delinquent and nondelinquent samples and between subsamples at various regions of the socialization continuum. What about the implications of the So scale for role-taking or perspective-taking ability? A basic tenet of the role-taking theory of psychopathy (Gough, 1948) is that the psychopath is deficient in describing and evaluating his own behavior from the standpoint of the observer, that is, in seeing the self as a social object. From this premise, all of the behavioral anomalies encompassed in the concept of psychopathy may be inferred, for instance, the absence of deep or lasting attachments, failure to plan ahead, irritability, inconsistent work patterns, and recklessness. Other inferences also flow from the concept, including disturbed object-relationships such as relative inability to experience anxiety and guilt.

Is there any research evidence for the So scale pertaining to these perspective-taking implications? In one study (Reed & Cuadra, 1957), the So scale was given to 204 nurses in successive training classes at a V.A. Hospital. At the end of the three-month residential program, each nurse took an adjective checklist for self-description, then on the same list described each of the other nurses in her work-group of four, and finally, attempted to predict how she would be described by her three peers.

Predictive accuracy in seeing self as an object was defined as the correspondence between what the peers said and what the nurse predicted they would say. The correlation between the measure of correspondence and scores on the So scale was .41 ($p < .01$). At a later time, the nurses were asked to nominate the five classmates considered to be most insightful in the total class and the five considered to be least insightful. Composites of the nominations for each nurse were treated as scores; these scores were significantly higher ($p < .02$) for nurses in the top quartile on the So scale in comparison with those of nurses in the bottom quartile.

Two other studies pertaining to perspective-taking among psychopaths may be mentioned, although neither made use of the So scale. Moss (1975) studied military disciplinary inmates and found that diagnosed psychopaths were less adept at postdicting the behavior of stimulus persons than were nonpsychopaths. Smith (1976) classified male prison inmates as psychopaths or nonpsychopaths on the basis of case-history data and MMPI profiles. His nonpsychopathic men displayed greater accuracy in anticipating reactions of

others than did psychopaths in spite of his stated expectation that the findings would come out in the other direction.

Perspective-taking, as understood in this presentation, pertains to looking at one's own behavior and reactions from the standpoint of the other person. Presumably, this "perspective-taking" will lead to more sensitivity to the feelings and wishes of others and to more accurate perceptions of self in the interpersonal sphere.

This perspective-taking deficit in psychopaths could also be described as an attentional deficit, in which case the targets of attention could be visual stimuli, oral instruction and commands, or other inputs open to study in laboratory experiments. Kosson and Newman (1989), for example, carried out a study of this kind, using groups selected on the basis of their So scores. In one experiment, 30 college men in the upper third of the So scale distribution were compared with 30 college men in the lower third; in Experiment 2, high versus low subsamples of 30 each were drawn from the 673 tested. The tasks required participants to classify visual and auditory stimuli into designated classes, and to distinguish between target stimuli and distractors.

The two experiments sought to compare accuracy on the primary task (visual or auditory classifications) with accuracy on the secondary task (the other stimulus category), for high scorers on So versus low scorers. A general finding was that low scorers on So did poorly on secondary tasks compatible with the notion that their attention was inefficiently or inaccurately given to peripheral cues. High scorers on So, on the other hand, allocated attention to peripheral as well as to focal cues and thus achieved greater accuracy in decisions where peripheral as well as focal information had to be considered.

Physiological responses (blood pressure, electrodermal conductivity, and rate of respiration) have been related to the So scale by means of polygraph testing (Waid & Orne, 1982). In experimental work, deception or prevarication can be studied by transmitting "guilty knowledge" to subjects and then seeing whether the polygraph analysis can detect this. Waid, Orne, and Wilson (1979a) found that undetectable respondents on the polygraph examination scored significantly lower on the So scale than did detectable respondents. Among subjects with very high So scores, some who were innocent were nonetheless classified as deceptive by the polygraph analysis, primarily because of enhanced electrodermal response. The difficulty in identifying "guilty" low scorers on the So scale was not due to their awareness of being tested on the polygraph because, even when they were unaware that their physiological responses were being recorded, they were less detectable (Waid, Orne, & Wilson, 1979b).

The implication in these studies that psychopaths, or low scorers on the So scale, are likely to escape detection in polygraphic examinations is denied by Raskin and Hare (1978). They studied 48 prisoners, half of whom were diagnosed as psychopaths; half of each subgroup of 24 were then instructed

that they were guilty of having taken money in a mock crime. Among the 24 psychopaths, 23 were correctly classified by the polygraph as either innocent or guilty, and among the 24 nonpsychopaths, 19 were correctly classified.

The most systematic analysis of this topic in reference to the So scale is that of Honts, Raskin, and Kirchler (1985). They criticized the Waid, *et al.* (1979b) study of the So scale as too dependent on the skin-conductance reading and for inattention to other polygraphic parameters. They recommended using the "control question technique," which involves comparing polygraph readings on all vectors, for questions directly relevant to the crime under consideration versus readings for responses to control questions. For 168 subjects, drawn from a prison, the community, and a college, a semiobjective scoring of the polygraph data obtained in this way permitted correct classifications of 95% of the "guilty" participants in the experiment and 90% of the "innocent" from among those low on the So scale and correct identifications of 86% of the "guilty" and 82% of the "innocent" from among those scoring high on So. Clearly, there was no decrement in accurate classifications for low scorers on the So scale. The semiobjective score, based on differences between relevant and irrelevant questions, correlated −.22 with So, suggesting that higher scores on So are associated with less differential reactivity.

Low scorers on the So scale appear to be less responsive to verbal reinforcements during learning in a laboratory situation (Sarbin, Allen, & Rutherford, 1965). When 30 chronically delinquent boys were compared with 30 nondelinquents matched for age, intelligence, and parents' occupation on two conditioning trials, there were only insignificant differences. However, when the delinquents scoring low on So were compared with delinquents scoring high, statistically significant differences ($p < .05$) were found in favor of the high scorers. Likewise, significant differences were found between controls high on So and controls low on So. Praise, expressions of approval, and the like increased the levels of conditioning among the high scorers but had little effect on the low scorers.

Notwithstanding the findings reviewed in this section, commentators on theoretical viewpoints concerning psychopathy have tended to doubt both the validity (Naess, 1964) and comprehensiveness (Doren, 1987) of the role-taking theory. Smith (1978), although not making use of the So scale in his studies, characterized the concepts of "role-taking" and "empathy" as slippery and full of surplus meanings rendering empirical investigations of the theory difficult. An obvious reply to Smith's criticisms is that use of the So scale as the research index for the criterion concept can lead to quite precise and unambiguous classifications and forecasts.

Hare (1970) felt that an appeal to role-taking or perspective-taking deficiencies begged the question of the origin of these deficiencies. The issue of

the etiology of the deficit, however, was in fact taken up in the original paper (Gough, 1948), with genetic, constitutional, developmental, and interactional possibilities noted. Studies of monozygotic and dizygotic twin pairs on the CPI (Dworkin, Burke, Maher, & Gottesman, 1976; Gottesman, 1966; Horn, Plomin, & Rosenman, 1976) have generally found that the intraclass correlation for dizygotics on the So scale is more than half as large as that for monozygotics, leading to inconclusive heritability estimates and a low probability of a genetic etiology. As of now, a developmental/interactional hypothesis for the origin of the perspective-taking and other deficiencies indexed by the So scale seems to be the most plausible.

Other Measures of Psychopathy

Another way to examine the merits or demerits of the So scale as an indicator of psychopathy is to compare scores directly with other measures designed with similar intentions. Cooney, Kadden, and Litt (1990) administered the So scale, the Psychopathic Deviate (Pd) scale of the MMPI as scored from the MMPI-168 short form (Overall & Gomez-Mont, 1974), and the 22-item Hare Psychopathy Checklist (Hare, 1980) to 78 male and 39 female alcoholic inpatients. They also used the NIMH Diagnostic Interview Schedule (DIS; Robins, Helzer, Croughan, & Ratcliff, 1981). From the section of that interview schedule on Antisocial Personality Disorder (APD), a present-absent classification was made for the diagnosis of antisocial personality disorder and a symptom count was made of the number of childhood conduct problems and adult antisocial behaviors.

In the total sample of 117 patients, intercorrelations among the four personality measures, with the So scale scored in reverse direction (for delinquency), were as follows: So versus Pd, $r = .56$; So versus Hare checklist, $r = .36$; So versus DIS-APD symptom count, $r = .65$; Pd versus Hare checklist, $r = .29$; Pd versus DIS-APD symptom count, $r = .38$; and Hare checklist versus DIS-APD symptom count, $r = .34$. Factor analysis of the four measures produced a single first dimension accounting for 57.3% of the variance in the matrix. Loadings on this factor were .90 for So, .69 for the DIS-APD symptom count, .58 for Pd, and .45 for the Hare checklist. The authors concluded that the So scale was the best single measure of the underlying construct.

On the DSM-III (American Psychiatric Association, 1980) classification on Antisocial Personality Disorder, 88 of the patients were judged to be non-APD and 29 were judged to have the disorder. Point-biserial correlations against this diagnostic dichotomy were .43 for So, .28 for Pd, and .14 for the Hare checklist. In a discriminant function analysis of these three measures to distinguish between the APD and non-APD patients, the So scale was the only one to meet stepwise inclusion criteria.

A similar study was conducted by Hare (1985) with 274 white male

inmates from a Canadian institution. His research variables included (1) a global rating of psychopathy on a 7-point scale, (2) the observer's responses to the Hare 22-item checklist, (3) the MMPI Pd scale, (4) the MMPI Hypomania (Ma) scale, (5) the So scale, (6) self-reports on a weighted form of the Hare checklist, and (7) composites of Pd + Ma and Pd − So. Scores on the MMPI Pd and Ma scales were K-corrected. The number of inmates tested in each pairing of variables ranged from a low of 105 to a high of 245. To define a criterion, two clinicians independently determined whether each inmate met the DSM-III criteria for Antisocial Personality Disorder (APD); 105 were classified as APD and 169 were not.

Point-biserial correlations of the measures with the APD criterion were for the Hare checklist, as completed by observers, $r = .67$; global rating $r = .57$; Pd − So $r = .44$; So $r = -.37$; self-rating on the checklist $r = .35$; Pd + Ma $r = .33$; Pd $r = .29$; and Ma $r = .21$. Factor analysis of six of the variables (including the diagnostic classification) produced two major factors. The first, accounting for 52.7% of the variance, had major loadings on the global ratings (.91), the Hare checklist (.91), and the criterion diagnosis (.76). The second, accounting for 18.8% of the variance, had major loadings on So (−.81), self-reports on the checklist (.79), and Pd + Ma (.71). The two factors seemed to split the variables into observer-based measures (Factor 1) and self-report measures (Factor 2). Both factors were related to the clinical diagnosis (loadings of .76 and .33), although the association was stronger for Factor 1.

From these two studies of measures used to identify psychopathy and antisocial proclivities, it seems reasonable to conclude that (1) scores on the So scale correlate from about −.30 to −.65 with other measures of psychopathy, (2) So scores differentiate between clinically diagnosed APD and non-APD samples as well as or better than other self-report variables, and (3) in factor analyses of self-report measures for psychopathy, scores on the So scale appear to have the largest factor loading.

Academic Criteria

A basic tenet of the So scale is that it should relate to prosocial and favorable outcomes or behavior as well as to asocial or negative outcomes. Criteria of prosocial behavior may be found in the academic arena, for instance, grade point averages in high school and college, graduation versus dropout at different educational levels, and differences in attainment among high-aptitude or gifted students.

Holland's (1959) analysis of 743 Merit Scholars and 578 Certificate of Merit winners has already been reviewed. For males (who had been tested in high school), the median correlation of scores on the So scale with first-year college grades was .26, and for females the median coefficient was .24.

Hogan and Weiss (1974) studied 54 males elected to Phi Beta Kappa at

Johns Hopkins University, 61 other men who also had good intellectual potential but were not honor students, and 87 unselected men. Means on the So scale were 37.4, 34.4, and 33.0, giving an F ratio of 9.8 ($p < .01$). The t test for the difference between the Phi Beta Kappas and the high-ability subgroup was 2.98 ($p < .01$), equivalent to a point-biserial correlation of .27. This finding lends support to the inference that superior performance by high-aptitude persons in structured environments is related to scores on the So scale.

So scale scores, however, do not seem to be related to academic performance among college students in general. Gough and Lanning (1986) correlated the So scale scores with grades for samples of 1,347 males, 326 males, 1,842 females, and 570 females, obtaining correlations of .10 and .01 for men and of − .02 and .06 for women. For a small sample of medical students tested at entry (Gough & Hall, 1964), correlations of So scores with four-year GPA and with research ratings of clinical competence by faculty members were − .04 and − .08.

What about performance in medical practice? One study (Gough, Bradley, & McDonald, 1991) related CPI scores from testing at the beginning of the residency program for 95 anesthesiologists to ratings by staff supervisors two years later. For the So scale scores, the correlation with ratings was .26 ($p < .05$).

Given the obvious relevance of intellectual ability and scholastic aptitude to grades in high school and college, the question arises of the relationship of the So scale to cognitive variables of this kind. Information is available in the current CPI manual (Gough, 1987) and in archival files. For one sample of 423 college women, the correlation of So scores with SAT Verbal scores was − .03, and for another sample of 99 women the correlation of So scores with SAT Mathematical scores was .02. Corresponding values for 99 men were .20 (Verbal) and .30 (Mathematical). For 608 male and 379 female graduate students in psychology, the correlations of So scores with scores on the Miller Analogies Test were − .08 and − .04. For 239 training school inmates the correlation of So scores with the Army Beta test scores was .06. For 100 military officers, the correlation of So scores with the Wesman Personnel Classification Test total scores was − .01. For 452 college males, correlations of So scores with those on the SAT Verbal and SAT Mathematical were both − .09. For 163 adult men and 298 adult women, correlations of So scores with the Terman Concept Mastery Test were − .02 and − .12. For the most part, these correlations are trivial. The largest coefficient cited above was that of .30 for So scores versus SAT Mathematical scores in a sample of 99 college men, but this was countered by a correlation of − .12 for a larger sample of 452 men. It may be assumed that intellectual ability, as ordinarily appraised, has little or no relationship to the So scale scores of young adult and adult samples.

Among high school students, however, there does seem to be a modest association of So scores with intellectual ability, as indicated by correlations with group tests of ability of .20 for 1,895 boys and .19 for 2,254 girls. Correlations of So scores with over-all high school grades (Gough, 1964) have been reported of .30 for 571 boys from five schools and of .31 for 813 girls from these same schools, and also of .33 for 649 boys from 10 different schools and of .30 for 722 girls from these same 10 schools. To permit calculation of these correlations, grades were standardized within each school and then the standardized scores were correlated with the So scores. These results for American high school students were confirmed by a cross-cultural study in Greece (Repapi, Gough, Lanning, & Stefanis, 1983). For 513 high school boys in Athens, the correlation of So scores with grade point average was .25, and for 477 girls the correlation was .22.

Another criterion of performance in school is graduation versus dropout. A study of this criterion for high school students (Gough, 1966) reported findings for an initial sample of students from three high schools in three states and for a second sample of students from four schools in four states. The CPI was administered to the students in the 10th and 11th grades, or in early fall during the 12th year. In the initial sample, there were 656 boys who graduated and 124 who did not. The graduates had a mean So score of 37.43 and the dropouts a mean of 34.62. The t ratio was 4.76 ($p < .01$), equivalent to a point-biserial of .17. In these same schools, there were 721 girls who graduated and 160 who did not. The means on So scores were 40.18 and 37.61, giving rise to a t test of 5.48 ($p < .01$) and a point-biserial correlation of .18.

In the second sample, 352 boys graduated and 54 did not. Their means on the So scale were 36.59 and 33.11, with a t test of 4.13 ($p < .01$) and a point-biserial correlation of .18. In these same schools, 357 girls graduated and 56 dropped out. Their means on the So scale were 38.74 and 36.34, with a t test of 4.25 ($p < .01$) and a point-biserial correlation of .21.

In one college sample of 694 males from the CPI archival files, tested just prior to the start of the first year, there were 522 who graduated four years later and 172 who did not. Their means on the So scale were 39.03 and 36.96, with a t test of 4.92 ($p < .01$) and a point-biserial correlation of .18. In another study (Maxwell, 1960), a point-biserial correlation of .23 for So scores versus graduation or dropout was found for a sample of 400 students including both sexes. In a study of nine successive classes in a school of medicine (Gough & Hall, 1975), the means on the So scale for 817 graduates and 13 dropouts for academic reasons were 37.86 and 34.69, with a t test of 2.44 ($p < .02$). There were also 35 nonacademic dropouts (ill health, financial problems, loss of interest, etc.) whose mean score on the So scale was 36.80.

A study of a different academic criterion (Hetherington & Feldman, 1964) was based on 78 college students (39 of each sex) enrolled in two courses in child psychology and observed in situations in which cheating on examinations was purposefully made easy. In one situation, a 90-item objective test was given under very lax supervision. Experimental observers sitting among the students noted the occurrence of copying, use of crib notes, and allowing others to copy answers. A second situation used an essay examination in which the five questions asked were distributed one week early. Test booklets, available at bookstores, were to be used to record answers. At the time of testing, booklets distributed by the instructor were marked by an inconspicuous pinprick on the back cover, permitting the identification of any students who turned in previously written test booklets.

In the third situation, a difficult oral test was given in the instructor's office. After a brief period of questioning, the instructor was called out of the room. The text on which the questions were being based was left in a conspicuously visible place on the instructor's desk, with its exact position carefully recorded. On return, the instructor was able to note whether the book had been moved and also whether it had been opened.

Forty-six students (28 males, 18 females) cheated in one or more of the three situations and 32 (11 males, 21 females) did not. Corresponding means on the So scale were 35.4 and 38.8, giving rise to a t test of 2.23 ($p < .05$) and a point-biserial correlation of .25. Although means and standard deviations on the MMPI Pd and L scales were not given, Hetherington and Feldman stated in their text (p. 214) that these two measures failed to differentiate significantly between cheaters and noncheaters. It should be mentioned that a later study on cheating among college students (Kipnis, 1968) also yielded higher So scores for those who did not cheat as compared with those who did.

A summary of the findings in this section should be prefaced by the remark that the So scale was not proposed as a key variable in the prediction of academic performance. Other cognitive and noncognitive measures are explicitly directed to this domain and will produce stronger relationships. Nonetheless, a theoretical view of the So scale as an indicator of prosocial compliance and the constructive internalization of normative values (which include specifics such as doing well in school and at work) leads to an expectation of positive relationships.

When grade point average is used as a criterion, scores on the So scale are predictive at correlational levels around .30 in high school, near zero in college, and even slightly negative in postcollege education. When graduation versus dropout is used as a criterion, point-biserials of about .20 are found at all three levels, with higher scores on So associated with graduation. For cheating on examinations, one study gave a point-biserial correlation of .25 for So, with higher scores associated with noncheating.

The work environment is another and obvious place to observe positive, prosocial behavior. Extensive use of the CPI has been made in the field of law enforcement from which two examples may be given. Mills and Bohannon (1980) related scores from tests given to police cadets in a training academy to job ratings from supervisors obtained after one year at work. For 49 officers, the correlation of So scores with ratings of leadership was .17, and with ratings of over-all suitability the coefficient was .26. Hargrave and Hiatt (1989) compared 45 municipal police officers who had received serious disciplinary reprimands with 45 matched controls whose records showed no such problems. On the So scale, the problem-free officers scored significantly ($p < .01$) higher than those with problems, as indicated by a t test of 2.64 (equivalent to a point-biserial correlation of .32).

The nonsignificant finding of Mills and Bohannon for leadership is supported by a much larger study (Gough, 1990) in which 11 different samples totalling 4,253 men and 3,078 women were evaluated for leadership according to one of six different criteria. For the five samples of women, correlations of So scores with the criterion rating of leadership went from a low of .00 to a high of .08, with a median of .03. For the six samples of men, correlations for So scores went from a low of .01 to a high of .17, with a median of .13.

To go farther into the literature on occupational performance would take this article too far afield from its primary emphases on the personological implications of the So scale and on the diagnosis of social deviance. For a comprehensive review of relationships between job performance and personality test variables, including dependability, Hough's (1988) meta-analysis is recommended.

Cross-cultural Studies

A basic tenet of the CPI is that the folk concepts for which the inventory is scaled are cultural universals, that is, ways of describing and evaluating one's own behavior and that of others that are found in all societies and cultures. For this reason, cross-cultural studies of individual scales and of the inventory as a whole are relevant to the stated purposes of the test. One such study (Gough, 1965b) compared American findings for the So scale with data from nine other countries, using Afrikaans, French, German, Hindi, Italian, Punjabi, and Spanish translations of the scale.

The American baseline samples consisted of 9,001 nondelinquent males, 2,794 delinquent males, 9,776 nondelinquent females, and 948 delinquent females. On the 54-item So scale, male nondelinquents had a mean So score of 36.74 and the male delinquents a mean of 27.12. The t ratio for the difference was 78.68 ($p < .001$), equivalent to a point-biserial correlation of .59. The nondelinquent females had a mean So score of 39.46 and the delinquents a mean of 29.47. The t test for the difference was 53.85 ($p < .001$), equivalent to a point-biserial correlation of .46.

For the other countries pooled, the 2,198 nondelinquent men had an So scale mean of 34.15 and the 1,011 delinquents a mean of 28.26. The t test for the difference was 26.82 ($p < .001$), equivalent to a point-biserial correlation of .43. In the other countries, the 797 nondelinquent women had a mean on So of 36.11 and the 299 delinquents a mean of 27.50. The t ratio for the difference was 22.72 ($p < .001$), equivalent to a point-biserial correlation of .56.

A study in India (Gough & Sandhu, 1964) provided results on the So scale for a number of subsamples. For 39 Borstal boys classified as casual or first offenders, the mean So score was 33.95; for 23 Borstal boys classified as habitual offenders the mean was 24.78. The t test for this difference was 8.10, equivalent to a point-biserial of .72. The So scale means for other samples were for 99 Faridkot jail casual and first offenders 34.31, for 20 Delhi jail habitual offenders 23.15, and for 22 Ambala prison hardened and habitual offenders 21.55. Similarly positive findings for the So scale have been reported in Japan (Mizushima & DeVos, 1967) and Sweden (Rosén & Schalling, 1974).

After allowing for shifts in mean levels (a common finding in cross-cultural research on tests), the differentiations between delinquent and nondelinquent samples have in every instance been statistically significant and not very different in magnitude from those found in American samples. Also, differentiations between subsamples of delinquents, ranked for the severity of offenses, have proved to be significant and similar in magnitude to those observed in American analyses.

The 1987 Revision

In 1987, a new version of the California Psychological Inventory was published in which 462 items from the 1957 version were retained; no new items were added. The longer scales from the first edition were generally shortened by about 15 percent in length, and the shorter scales were lengthened by the same amount (see Gough, 1987, for an account of this work). The So scale was reduced from 54 to 46 items by dropping items that had shown weak validities in the development of the 54-item scale and that did not differentiate well between delinquent and nondelinquent samples in the cross-cultural file. In the CPI normative sample of 1,000 persons of each sex, the 46-item So scale had correlations of .98 with the 54-item scale in both instances. In all of the text from this point on, statistical data are presented for the 46-item version only, either from testing done with the current 46-item form or from prorating of means on the 54-item scale down to the 46-item basis.[2]

[2]An excellent review of early work (primarily from the 1950s and 1960s) with the 54-item scale may be found in Megargee's (1972) *The California Psychological Inventory Handbook*. Not all of

Factor analyses of the 54-item scale (Butt, 1973; DeFrancesco & Taylor, 1986; Rosén, 1977; Stein, Gough, & Sarbin, 1966) have indicated that from four to six factors will account for the major sources of variation in the interitem matrix. Rosén and Schalling (1974) constructed six subscales which, when examined by maximum likelihood factor analysis, could be reduced to a single factor conceptualized as role-taking deficiencies. It was hypothesized that a similar factor structure would be found in the 46-item scale.

From unpublished analyses of the 46-item matrix by Kevin Lanning, Howard Terry, and the author using various computational methods for determining interitem correlations and also various methods for factoring and rotating dimensions, the most general outcome was a four-factor solution, with item loadings of similar magnitude for male and female samples. The items in these four clusters were reviewed for content and for correspondence to factor membership in the prior studies. A few items were transferred from one factor to another to achieve maximum similarity across all of the analyses. In this way, four clusters were defined: (1) Optimism, Self-confidence, and Positive Affect (12 items); (2) Self-discipline and Cathexis of Social Norms (15 items); (3) Good Memories of Home and Parents (10 items); and (4) Interpersonal Awareness and Sensitivity (9 items).[3]

Examples of items for each cluster may be given: Cluster 1, "Most of the time I feel happy" (true), "I have had more than my share of things to worry about" (false), and "Life usually hands me a pretty raw deal" (false); Cluster 2, "I think I am stricter about right and wrong than most people" (true), "I would do almost anything on a dare" (false), and "I often act on the spur of the moment without stopping to think" (false); Cluster 3, "My home life was always happy" (true), "My parents have often disapproved of my friends" (false), and "My parents never really understood me" (false); and Cluster 4, "Before I do something I try to consider how my friends will react to it" (true); "I find it easy to 'drop' or 'break with' a friend" (false); and "I often think about how I look and what impression I am making upon others" (true).

Each factor, scored as a subscale, differentiated significantly ($p < .01$) between delinquent and nondelinquent samples of both men and women; the *N*s were 272 versus 1,088 for men and 400 versus 2,266 for women. The

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the studies reviewed by Megargee have been cited in this paper. Megargee concluded (p. 65) that "there seems to be little doubt that the So scale is one of the best-validated and most powerful personality scales available."

[3]Scoring of the items in each subscale on Form-462 of the CPI is (1) 245 (true) and 12, 94, 182, 184, 257, 369, 385, 398, 405, 416, and 457 (false); (2) 123, 212, 323, 389, and 409 (true) and 36, 93, 170, 214, 386, 393, 420, 431, 435, and 436 (false); (3) 168, 180, 367, and 439 (true) and 164, 302, 336, 396, 428, and 444 (false); and (4) 62, 144, 192, 198, 317, 334, and 373 (true) and 327 and 338 (false). Researchers who wish to abstract and use the 46 items as a separate device should obtain permission from the publisher and copyright holder by writing to Permissions Editor, Consulting Psychologists Press, P.O. Box 10096, Palo Alto, CA 94303.

point-biserial correlations for men were .41 for Optimism and Self-confidence, .44 for Self-discipline and Cathexis of Social Norms, .31 for Good Memories of Home and Parents, and .18 for Interpersonal Awareness and Sensitivity; the same four correlations for women were .47, .52, .29, and .22. A multiple regression of all four subscales to discriminate between delinquent and nondelinquent samples improved only slightly and insignificantly ($p > .05$) on the differentiations given by the simple sum of the four scales, equal (of course) to the score on the So scale. For nondelinquent men versus delinquents, the point-biserial correlation for So was .54, and for nondelinquent women versus delinquents the point-biserial value was .58.

Nonetheless, the four subscales for the So scale are helpful in indicating the content of the full scale and in some contexts might produce different patterns that would be enlightening. For ordinary use of the measure, however, it seems entirely sufficient to work with the total score on the So scale. Accordingly, the discussion below will deal only with scores on the full 46-item scale.

Correlations With Other Personality Scales

In the Administrator's Guide for the CPI (Gough, 1987), correlations of the 20 folk scales and three vector measures are given with 19 other inventories and scales. Perusal of these correlations can furnish information helpful in painting a psychological portrait of the implications of the So scale. Additional information of this kind is available in published reports and manuals for other tests. Except for instances where the relationships are of clear theoretical importance (as between So and MMPI Pd), citations here are restricted to scales with correlations of .30 or more for both sexes.

From the Cattell 16 PF (Cattell & Eber, 1964), Factor C (maturity and emotional stability) had correlations of .34 for 78 men and .46 for 93 women. Factor G (persistence and conscientiousness) had correlations of .41 and .37, and Factor M (Bohemianism) had correlations of $-.34$ and $-.37$.

From Comrey's Personality Scales (Comrey, 1970), for 55 men and 51 women, correlations of .48 and .59 were found for Emotional Stability. From the Maudsley Personality Inventory (Eysenck, 1959), for 89 men and 86 women, correlations with Neuroticism were $-.34$ and $-.41$. For the Guilford-Zimmerman Temperament Survey (Guilford & Zimmerman, 1949), on samples of 112 men and 88 women, correlations were found of .53 and .43 for Emotional Stability, .52 and .38 for Objectivity, .45 and .44 for Friendliness, and .44 and .45 for Personal Relations. In a sample of 97 men and 95 women who took Holland's Vocational Preference Inventory (Holland, 1985) and the California Psychological Inventory, correlations ranged from a low of $-.21$ to a high of .28 with the six scales from his hexagonal model of vocational interests. The coefficient of .28 was with Holland's Social Scale for women; however, the coefficient for men was only .06.

In his manual for the Hare Psychopathy Checklist—Revised, Hare (1991) reported correlations with the So scale for five samples. In the first, numbering 223 men, the coefficient was −.31. In the second ($n = 107$) the coefficient was −.43, and in the third ($n = 91$) the coefficient was −.34. In two samples of black inmates only, correlations were −.27 for 65 men and −.29 for 92 men. Hare's checklist can also be scored for two separate factors. The first stresses egocentric and self-serving personality traits, and the second an unstable lifestyle and antisocial behavior. The So scale is generally much more strongly correlated with Factor 2 than with Factor 1 (Hare, Hemphill, & Hayes, 1992). On the other hand, neither of Hare's checklist factors appears to register the themes assessed by So facets 1 (optimism and positive affect) and 4 (empathic sensitivity).

Jackson's Personality Research Form (Jackson, 1967) was available for 117 men and 66 women who had also taken the CPI. The subscale for Aggression had correlations with So scores of −.28 and −.58 and that for Impulsivity had correlations of −.31 and −.37.

Holliman and Guthrie (1989) administered the Millon Clinical Multiaxial Inventory (Millon, 1983) and the California Psychological Inventory (CPI) to 114 male and 123 female first-year college students. Correlations greater than .30 for the total sample between scores on So and scales of the Millon inventory were for Scale 7 (compulsively conforming, compliant) $r = .47$, for Scale 8 (passive-aggressive, negativistic) $r = -.45$, and for Scale T (drug abuser, drug-dependent) $r = -.30$.

Several sources of information for correlations of scores on the So scale with scales of the MMPI are available. From the 1987 CPI Administrator's Guide, for 184 males and 187 females, these relationships may be cited: F, $r = -.54$ for men and −.42 for women; Pd + K, $r = -.53$ for men and −.54 for women; Sc + K, $r = -.38$ for men and −.42 for women; Ma + K, $r = -.42$ for men and −.35 for women; and Welsh A (anxiety), $r = -.32$ for men and −.31 for women. For MMPI D (Depression) the correlations were −.19 for men and −.20 for women. In contrast, Holliman and Montross (1984) reported correlations between scores on So and D of −.57 for 33 college males and −.54 for 32 college females. Holliman and Montross also gave the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) to these students and obtained correlations with So scores of −.46 for the men and −.55 for the women.

For the four continuous scales of the Myers-Briggs Type Indicator (Myers & McCaulley, 1985) on 314 men and 196 women there were no correlations with So scores reaching the cut-off point of ±.30. However, the Judging-Perceiving scale (higher scores indicate a perceptual as opposed to evaluative orientation) had correlations of −.30 and −.24. Three scales from the Omnibus Personality Inventory (Heist & Yonge, 1968), for a

sample of 57 men and 51 women, reached the cut-off point: Impulse Expression, −.68 and −.49; Personal Integration, .70 and .47; and Low Anxiety Level, .61 and .43. One scale from the Thorndike Dimensions of Temperament (Thorndike, 1966) had correlations greater than .30 in samples of 54 men and 50 women: Cheerful, with coefficients of .37 and .40.

Lifton (1985), in a general critique of theories of moral development, presented correlations of CPI scales with Kohlberg's scale for Moral Judgment (Kohlberg, 1976, 1981) and for a measure of his own, based on a criterion sorting of Block's California Q-set (Block, 1961) for Moral Character. Lifton's subjects were 83 male and 83 female college students and 75 male and 76 female adults. Against Kohlberg's index, the correlations for So scores were −.10 for college men, .08 for college women, .41 for adult men, and .11 for adult women. In spite of one negative correlation, there is a slight trend towards low-positive relationships between So and moral reasoning scores as conceptualized by Kohlberg. The correlations of So scores with observers' judgments of moral character, as expressed in the Q-sort arrays, were .27 for college men, .13 for college women, .31 for adult men, and .33 for adult women. Three of these four coefficients are significant at or beyond the .05 level of confidence.

Another study of moral reasoning (Curtis, Billingslea, & Wilson, 1988) used an objective test (Defining Issues Tests; Rest, Cooper, Coder, Masanz, & Anderson, 1974) to assess stage levels according to Kohlberg's model. The P-score on this test indicates the extent to which the respondent favors principled or higher-level moral reasoning. For 47 men and 58 women volunteers from a college psychology class, a correlation of .43 was found between the P-scores and So scores.

Social anxiety as assessed by the Social Avoidance and Distress Scale (SAD; Watson & Friend, 1969) and the Social Reticence Scale (SRS; Jones, 1987) were related to the CPI in a sample of 121 male and 43 female college volunteers (Montgomery, Haemmerlie, & Edwards, 1991). In the total sample, So scores correlated −.24 with the SAD and −.21 with the SRS.

Cognitive functioning in regard to complexity versus simplicity of thinking was examined by Tetlock, Peterson, and Berry (1993) in relation to personality attributes and observers' ratings. They focused their study on the concept of integrative complexity as manifested in written material for 77 male and 54 female MBA candidates. Persons with high integrative complexity perceive people, events, and issues as replete with internal contradictions and inconsistencies, as multidimensional, and as ever-changing. Persons with low integrative complexity dislike ambiguity and dissonance and seek closure and certainty in their judgments. Scores on the So scale correlated −.19 ($p < .05$) with their measure of complexity.

The Hogan Personality Inventory (HPI; Hogan, 1983, 1986) contains

45 "homogeneous item composites" (for example, curiosity, self-confidence, thrill-seeking, and trusting) that are grouped into six primary scales. In his manual, Hogan cited correlations of scores on these primary scales with those on scales of the CPI for a sample of 125 men. For the So scale, these correlations were given for Intellectance $r = .26$, for Adjustment $r = .20$, for Prudence $r = .46$, for Ambition $r = .20$, for Sociability $r = .00$, and for Likeability $r = .28$.

A companion instrument for the HPI is the Hogan Personnel Selection Series (Hogan & Hogan, 1986). From the manual for this test, correlations of its six scales with So scores, in a sample of 190 male and female public school teachers and principals, were for Service Orientation $r = .28$, for Reliability $r = .46$, for Stress Tolerance $r = .40$, for Clerical Potential $r = .40$, for Sales Potential $r = .03$, and for Managerial Potential $r = .38$.

In recent years, analyses of ratings by observers as well as of self-reports have converged on a set of five major themes (Digman, 1990; Goldberg, 1990; McCrae & Costa, 1987), often called the "Big 5" or the Five-factor Model. The five factors include (1) Extraversion or surgency, (2) Agreeableness, (3) Conscientiousness, (4) Emotional stability versus neuroticism, and (5) Intellect or openness to experience. The NEO Personality Inventory (Costa & McCrae, 1985) is explicitly scaled for these five factors. Correlations of scores on the five NEO factor scales with scores on So in a sample of 153 men and 195 women (McCrae, Costa, & Piedmont, 1993) were for Neuroticism −.27, for Extraversion .01, for Openness −.19, for Agreeableness .14, and for Conscientiousness .25.

Unpublished data from the CPI archives for 59 male students and 49 females who had taken both the NEO and CPI gave rise to these correlations for the So scale: for men, Neuroticism −.38, Extraversion .04, Openness −.19, Agreeableness .41, and Conscientiousness .29; for women, the correlations with So were Neuroticism −.45, Extraversion .11, Openness −.19, Agreeableness .32, and Conscientiousness .30.

Several studies compared scores on the CPI with Zuckerman's Sensation-Seeking Scale (SSS; Zuckerman, Kolin, Price, & Zoob, 1964). In a sample of 100 hospitalized male alcoholics (Kish, 1971), a correlation of −.37 was found between So scores and the total scores on the SSS. In the CPI Administrator's Guide (Gough, 1987) correlations between So scores and the SSS total scores were reported as −.36 for 69 men and −.17 for 69 women.

Bachorowski and Newman (1985) administered Barratt's scale for impulsivity (Barratt, 1959) and the So scale to 40 male undergraduates and also the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975). Correlations for So scores were −.25 with those on Barratt's measure of impulsivity, −.38 with the EPQ Extraversion scale, .04 with EPQ Neuroticism, −.54 with EPQ Psychoticism, and .13 with EPQ Lie.

Rotter's scale for locus of control (Rotter, 1966) has been widely used in personality research. Higher scores are associated with the belief that reinforcements (positive or negative) are relatively independent of the person's efforts and determined by uncontrollable external forces. Lower scores are associated with the belief that reinforcements are attendant on one's own effort and behavior. Raine, Roger, and Venables (1982) tested 102 teenage boys and 81 teenage girls with Rotter's measure and 18 other scales including So. For the total sample of 183 persons, the correlation of So scores with locus-of-control scores was −.22, indicating that high scorers on So tended to have an internal orientation on Rotter's measure. In another study (Gough, 1974) correlations of So scores with locus-of-control scores were −.13 for 89 males and −.26 for 89 females.

Sexually aggressive behaviors were studied by Rapaport and Burkhart (1984) in a sample of 201 college males. Their criterion was based on an 11-item scale of coercive behaviors (e.g., "Removed or disarranged a woman's underclothing") and eight items asking about the method of coercion (e.g., "Used verbal threats"). Each item was answered on a 1 to 4 scale, from "never" to "often." Total scores on the 19-item measure correlated −.27 with the So scale scores. The sexual coercion scores also had correlations of .27 with those on Burt's (1980) Adversarial Sexual Beliefs scale and of .25 with scores on his Acceptance of Interpersonal Violence scale. Near-zero correlations were found for the coercion scores with scores on the Attitudes Toward Women Scale (Spence, Helmreich, & Stapp, 1973) and with scores on Hogan's (1969) scale for empathy.

Another area of burgeoning research in recent years concerns "integrity" testing, that is, the study of attributes such as honesty, conscientiousness, and dependability as they pertain to productivity or counterproductivity among workers (Sackett, Burris, & Callahan, 1989). Woolley and Hakstian (1992) examined the relationships among four of these tests and also correlated the CPI So scores with these measures. The four integrity tests evaluated by Woolley and Hakstian were (1) the Personnel Reaction Blank (PRB; Gough, 1972), (2) the Personnel Decisions, Inc., Employment Inventory (PDI-EI; Paajanen, 1988), (3) the Employee Reliability Index (ERI; Hogan & Hogan, 1986), and (4) the Reid Report (Ash, 1975; Reid, 1967).

The Personnel Reaction Blank has one total score, the PDI-Employment Inventory has separate scores for productive performance and likelihood of longer tenure on the job, the Employee Reliability Index has one score, and the Reid Report has separate scores for honesty and punitive attitudes toward dishonest behavior. In samples of 113 male and 158 female college students, these correlations were obtained for the So scale: Personnel Reaction Blank, .78 and .71; PDI-Employment Inventory performance, .51 and .39; PDI-Employment Inventory tenure, .30 and .35; Employee Reliability

Index, .72 and .66; Reid Report honesty, .26 and .26; and Reid Report punitive attitudes, .06 and .09. In a factor analysis of the integrity measures plus eight personality scales from three inventories, the So scale had its highest loading on a factor named "socialized control."

In a separate study, Woolley and Hakstian (1993) correlated the six scores from the four integrity tests and 12 scales from three personality inventories with self-reported frequencies of deviant (counterproductive) behavior in work-related and university-related settings. Correlations of the So scores with the total self-reported index were $-.29$ ($p < .01$) for men and $-.18$ ($p < .05$) for women.

Conclusions

What conclusions may be drawn from the extensive array of correlational evidence just presented? To the author, four major themes stand out. The first and most prominent, as expected for a scale intended to measure norm-observing and prosocial behavior, includes facets such as conscientiousness, moral behavior, reliability, and dependability, along with an absence of or minimal tendency toward unconventionality or nonconformist behavior. Given the vast amount of behavioral data on the So scale as a forecaster of rule-observing behavior, it would indeed be strange to find any other pattern of correlations with psychological measures in this domain.

A second major theme has to do with emotional stability, maturity, cheerfulness, adjustment, and the absence of neuroticism and depression. Is there behavioral evidence to buttress this finding based on correlations with self-report personality inventory scales? Below, data drawn from behavioral and observational sources are presented.

A third theme embodies indicators of friendliness, objectivity in interpersonal relations, agreeableness, and likability. Evidence from observers' ratings on attributes such as these are considered later, when Tables 3 and 4 are discussed below.

A fourth theme has to do with a relative absence of aggressive, impulsive, and hostile behavior. There may be an element of overcontrol of negative impulse in the So scale as suggested by its correlation with scores on the passive overconforming measure on the Millon Clinical Multiaxial Inventory (Scale 7), at least among persons with very high scores on So. Barron's (1961) finding that moderately low So scores were conducive to creative achievement and very high scores an impediment is in line with an inference of suppressive control among high scorers on So.

Biographical and Observational Confirmation

In Tables 1 and 2 below, data are presented pertaining to the classification of delinquent and nondelinquent samples along a normative continuum, going from behavior of unusual probity and rule-respecting characteristics,

through midregions of ordinary compliance, down to chronic rule-breaking, including violence. Before that, however, let us look at several analyses of adjustment and personal stability in different settings and over the life span.

For samples of 51 men and 77 women, medical examinations between the ages of 42 and 50 permitted the assignment of over-all health ratings by two physicians (Bayer, Whissell-Buechy, & Honzik, 1980). An interjudge reliability coefficient of .66 was obtained; when the two ratings differed appreciably, the two physicians discussed the case to reach a consensual evaluation. CPI scores were available for these subjects from testing done 10 years earlier and also from concurrent testing.

Correlations for scores on the So scale from the earlier testing with the medical good-health ratings were .45 for men and .20 for women. From these and other cross-time relationships, it appears that characteristics like sobriety, prudence, and moderation in living habits are key factors leading to good health in midlife. Another indication of this theme came from an observer's Q-sort cluster in adolescence that included items such as calm, controlled, dependable, bland, and not rebellious or irritable; this cluster had correlations with So of approximately .48 for men and .28 for women.

Picano (1989) reported on 75 college women who had been assessed at the Institute of Personality Assessment and Research (IPAR) in the 1950s and then studied some 25 years later at midlife (see Helson, Mitchell, & Moane, 1984, for full information on the follow-up). A detailed biographical and life history inquiry was sent to the women in the follow-up, and from this material judges made ratings of adjustment in four categories of career, social life, psychological functioning, and physical health. Correlations of the So scale with these four criteria over the 25-year span were for career adjustment .26, for social adjustment .29, for psychological adjustment .35, and for physical health .05. Correlation of So with the over-all adjustment score was .39.

In a study of alcoholics (Kurtines, Ball, & Wood, 1978), 30 male and 30 female newly recovered patients whose sobriety had persisted for at least three weeks but less than four months were compared with 62 patients (31 of each sex) whose sobriety had persisted for a minimum of four years. On the So scale, adjusted to the 46-item length, the short-term patients had a mean of 23.85 and the long-term a mean of 25.73. The t test for the difference of 2.36 ($p < .05$) was equivalent to a point-biserial correlation of .21. A nonalcoholic control group of 30 men and 31 women had an adjusted mean of 29.81, significantly ($p < .01$) different from both the short-term and long-term recovered alcoholics.

Werner (1986) worked with 49 Asian and Polynesian high school students in Kauai, Hawaii whose fathers or mothers (or both) had serious problems associated with drinking alcohol when the child was between 2 and 10

years of age. From interviews and biographical data the children were classified into a sample of 20 showing serious personal problems (14 boys and 6 girls) and a sample of 29 (8 boys and 21 girls) who were relatively free of such problems. Means on the So scale, adjusted to 46-item length, were 25.27 for those with serious personal problems and 29.93 for those relatively free of such problems. The t test for the difference was 2.76 ($p < .01$), equivalent to a point-biserial correlation of .37. The children in the problem group also had poorer scholastic achievement and lower intellectual ability test scores.

Parental discord, as indicated by divorce, is related to the So scores of children in the family (Megargee, Parker, & Levine, 1971), with lower So scores found for children whose parents were divorced.

Suedfeld, Ramirez, Deaton, and Baker-Brown (1982) studied the attributes of prison inmates put in solitary confinement during their incarceration and also the effects of such confinement on the prisoners. Assignment to solitary confinement while in prison can be taken as at least a partial indication of the adequacy of the inmates' adaptation to the institutional rules and procedures. In one of the maximum-security prisons included in the study, the correlation between the scores on the So scale and the number of times 25 inmates had been put in solitary confinement was −.55.

Another study used six criteria of adjustment to prison during a two-year period (Carbonell, Megargee, & Moorhead, 1984) and related each to CPI scale scores from testing at admission. The ns varied from 491 to 839 for the six criteria. Correlations with the So scale were for rate of disciplinary infractions −.16, for days in segregation −.14, for days on sick call −.02, for ratings of dormitory adjustment .24, for ratings of work performance .14, and for ratings of educational achievement .04.

Conformity to traditional sex-role demands was studied by Helson and Picano (1990) in a sample of 110 women tested in the senior year in college and then followed up at age 43. The women were classified into four categories on the basis of age 43 information: nonmothers (including the never married), ever-divorced, neo-traditionals (married, but with at least 20% time spent in working), and traditionals (married, with no time or less than 20% time spent in working outside the home). The mean scores on the So scale for these four groups were for nonmothers 31.36, ever-divorced 32.31, neo-traditionals 35.14, and traditionals 36.00. The F ratio of 7.47 ($df = 3,106$) was significant beyond the .001 level. A t test for the first two groups versus the last two was 4.75, equivalent to a point-biserial correlation of .42.

The incidence of physical and medical disabilities was 14.5% for the nonmothers and ever-divorced as compared with 65.0% for the neo-traditionals and homemakers. However, in regard to high energy, the trends were reversed. Of those in the first two groups, 41.2% reported high energy,

whereas only 22% of those in the two traditional groups gave such a report. Whether the traditional role is "good" or "bad" for women is not a simply answered question, although it seems clear that, in this analysis, young women who score high on the So scale tend to opt for the traditional role as their lives unfold.

A final study for this section is that of Badham (1983) of 85 female and 83 male college students intensively assessed at the Institute of Personality Assessment and Research (IPAR) at Berkeley. At the end of the assessment day, 10 staff observers independently submitted Adjective Check List descriptions of each assessee, five submitted formulations of personality on the California Q-set (Block, 1961), and all made rankings of the assessees for attributes such as personal soundness, independence, and originality. Three criteria of personal soundness or adjustment were used by Badham. The first was the observers' trait ranking on this attribute. The second was a rating of personal adjustment made by two judges from the life history interview protocols. The third was the score on Marrott's (1981) index of personal soundness, based on 17 of the 100 items in the Q-sort. An equally weighted composite of these three estimates was derived and then correlated with scores on the various personality inventories and other tests the students had taken.

Correlations of scores on the So scale with the composite criterion were .36 for women and .14 for men. Larger correlations, as would be expected, were found for MMPI D (−.56 for women, −.37 for men), MMPI Sc + K (−.50 for women, −.29 for men), and MMPI A (−.43 for women, −.42 for men). Among the other large correlations were those for self-report scores on ACL Self-confidence (.47 and .50) and Heterosexuality (.43 for both sexes), CPI Sociability (.51 and .34), and the "Doubt" defense-coping scale of the CPI (Joffe & Naditch, 1977) (−.46 and −.49).

The studies reviewed in this section suggest that (1) scores on the So scale are modestly associated with nontest criteria of personal adjustment and physiological well-being, although less so than are other measures focused directly on such matters; (2) high scorers on So tend to enjoy better physical health than low scorers; (3) in adapting to specific problems such as withdrawal from alcohol addiction and avoiding retributive sanctions in prison, high scorers do better than low scorers; and (4) in their adoption of roles and coping strategies, high scorers are more conformist and traditional than low scorers.

Variables Not Related to the So Scale

From time to time in the text above, mention has been made of variables not related to scores on the So scale. It might be helpful at this juncture to bring these together into a general summary. In regard to ethnicity, in particular, comparisons of black and white respondents, published evidence indicates the absence of any significant differences. Cross, Barclay,

and Burger (1978) examined 772 first-year college students for the effects of ethnicity (black or white), sex, and parents' occupation (status) on the 18 scales of the original CPI. The *F* ratios from analyses of variance for So were insignificant ($p > .05$) for ethnicity and socioeconomic status but did reach significance for sex, with females scoring higher than males on the So scale.

From the CPI archives for inmates at one state institution, So means on the 46-item scale were computed for 598 black inmates, 406 Hispanic inmates, and 1,415 white inmates. The values were, respectively, 23.34, 22.94, and 22.14. Although the differences are small, the mean for the black inmates was significantly higher ($p < .01$) than those for each of the other samples. The difference between the Hispanic and white inmates was not significant.

Megargee and Cadow (1980) reported So scale means of 22.11 for 78 black correctional institution admittees and of 21.23 for 190 white admittees (means adjusted to the 46-item form of the scale). A *t* test for the difference between the two means was not significant ($p = .26$).

Although more evidence would be welcome in regard to the performance of black and white respondents to the So scale, it appears that the differences are small, of no practical importance, and insofar as they exist actually show the black respondents scoring slightly higher than the white when samples are comparable.

In the Administrator's Guide (Gough, 1987), correlations of CPI scales with socioeconomic status of the family, as assessed by the Home Index (Gough, 1971), are given for high school students. The correlations of the So scale were .09 for 350 boys and .20 for 363 girls. These low values, along with the absence of relationship between So and socioeconomic status found by Cross, *et al.* (1978), suggest that the status factor is of minor importance in relation to scores on So.

Intellectual ability is a third factor often believed to have an influence on personality scale scores. In studies already discussed above, it appeared that, in adult samples, tests of intellectual ability generally had near-zero correlations with scores on the So scale. However, in high school samples, correlations of approximately .20 were found.

Social desirability (Edwards, 1957) is a fourth variable often thought to play a prominent part in self-report personality assessment. Two of the most widely used scales to index the social desirability factor are Edwards' own 39-item SD scale of the MMPI and the K scale of the MMPI. For samples of 184 men and 187 women, correlations with the So scale were .26 with K for both sexes, and .37 for men and .25 for women with Edwards' scale. Although all four coefficients are significant at the .01 level, they are far lower than the values of .85 or more frequently suggested as probable for the desirability theme.

Can the predictive or classificatory accuracy of the CPI be improved by

taking account of the desirability factor? The only study to date of this question (Dicken, 1963) concluded that CPI scale validities would not be improved by any adjustment for social desirability or for acquiescence. It should also be noted that there is a growing body of opinion among personality psychologists (McCrae & Costa, 1983; Megargee, 1966) that social desirability is not, in fact, a confounding or disruptive element in assessment.

In summary, from available evidence, ethnicity, socioeconomic status, intellectual ability, and social desirability in the presentation of self all play relatively minor and inconsequential roles in regard to scores on the So scale.

The Normative Continuum

Table 1 presents 69 male samples, arrayed in rank order according to their mean scores on the So scale. Table 2 provides the same information for 40 female samples. Perusal of both arrays will show that there is a progression from groups characterized by rule-accepting and norm-following proclivities, to groups displaying minor problems in socialization, down to groups with clear tendencies toward norm-testing and rule-breaking behavior. A basic purpose of the So scale is to align groups and individuals in accordance with a presumptive normative axis. Tables 1 and 2 suggest that this goal has been reasonably well achieved for groups.

Table 1 is arranged so that samples with no definitional problems in socialization are in the left-hand column and samples with at least some sort of difficulty in socialization in the right-hand column. In Table 2 samples with no definitional problems are under A beginning in the left column and samples with some problems appear under B. It should be noted that there are no misclassifications on So scale means with regard to this dichotomy. That is, the highest So mean for any sample in the right-hand column for males is that of 29.30 for first offenders in a state training school for boys, a value that may be compared with the lowest left-hand column mean of 29.68 for male residents of San Francisco Bay area communities. The largest mean from the Category B samples of women is that of 29.05 for student shoplifters, lower than the Category A mean of 31.25 for San Francisco Bay area residents.

Contrasts between comparable more-socialized and less-socialized samples in the two columns are of interest. Male white-collar workers (Collins, 1991) had a mean So score of 32.54, whereas white-collar criminals had a mean of 26.45. The t test for the difference was 4.55, equivalent to a point-biserial correlation of .45. Collins' female white-collar workers had a mean of 32.76 and her female white-collar criminals had a mean of 27.19. The t test for the difference was 5.57, equivalent to a point-biserial correlation of .38.

The 196 male prison inmates tested in the United States had a mean of 22.78. The male normative sample of 1,000 had a mean of 29.92. The t test

for the difference was 16.31, equivalent to a point-biserial correlation of .43. The 345 female prison inmates from the United States ha a mean of 23.21, as compared with a mean of 31.33 for the female normative sample of 1,000. The *t* test for this difference was 20.70, equivalent to a point-biserial correlation of .49.

However, both the normative samples included 125 delinquents and prison inmates. What if the two comparisons excluded these cases from the nondelinquent side? In a previous paper (Gough & Bradley, 1992), the 196 male prison inmates and 76 juvenile delinquents were combined into a sample of 272, and then this sample was compared with a nondelinquent sample of 1,088 persons, roughly matched in age and status to the lawbreakers. The So scale means were 31.05 for the nondelinquents and 22.52 for the delinquents, giving rise to a point-biserial correlation of .54. A similar analysis for the 400 delinquent females (345 prison inmates and 55 delinquents) against 2,266 comparable nondelinquents produced means of 33.25 for the latter and 22.88 for the former; the point-biserial correlation for the dichotomy was .58.

Among the male samples, the 2,913 vocational institution wards had a mean of 22.59. A comparable control sample of 1,300 nondelinquent young men (not reported in Table 1) had a mean of 31.81 and a standard deviation of 4.95 on the So scale. The difference between the two means produced a *t* test of 51.58, equivalent to a point-biserial correlation of .62.

Examination of male and female samples from the left-hand columns in both tables shows a consistent difference in mean scores, with female samples scoring higher. For the two normative samples, the means for women and men were 31.33 and 29.92. For high school students, the means were 32.88 and 30.84. For college students the means were 34.12 and 31.84. For optometry students the means were 38.11 and 35.80. For medical school students the means were 34.43 and 33.22. For psychology graduate students the means were 32.11 and 30.65. With an occasional exception, apparently due to special sampling within the particular group, women score about two points higher on the So scale than do men of comparable background.

Among less socialized samples the differences are less clearcut. Female prison inmates in the United States had a mean of 23.21 as compared with a mean of 22.78 for American men in prison. American female juvenile delinquents had a mean of 20.78 as compared with a mean of 21.87 for American male delinquents. Female high school disciplinary problems had a mean of 28.07 as compared with a mean of 26.04 for male high school disciplinary problems. The other less socialized female samples are too small to allow for meaningful intersex contrasts in the cross-column comparisons.

Means for Male Samples

Let us now focus attention on Table 1 only, and in particular on be-

TABLE 1

46-ITEM CPI So (SOCIALIZATION) SCALE MEANS* AND STANDARD DEVIATIONS FOR MALE SAMPLES INDICATED

More Socialized	*N*	*M*	*SD*	Less Socialized	*N*	*M*	*SD*
Irish entrepreneurs	37	38.11	4.64	Training school wards, first offenders[b]	45	29.30	na
Engineering graduate students	47	35.53	4.38	Exhibitionists, no other crimes[c]	30	29.05	na
Bank managers	49	35.10	4.33	College students, moderate users of marijuana[d]	78	28.71	na
Medical school applicants	70	34.69	3.87	Psychiatric patients[e]	26	28.71	na
Optometry students	100	34.59	3.87	College students, regular shoplifters[f]	25	27.86	na
High school "best citizens"	90	34.56	4.66	Sons of fathers with 1 or 2 symptoms of alcoholism[g]	71	27.42	5.37
High school "leaders"	90	34.18	5.14	Psychiatric patients	41	27.29	6.33
Catholic priests	41	33.63	4.11	White-collar criminals[a]	258	26.45	6.46
College majors in education	167	33.57	4.35	College students, frequent users of marijuana[h]	37	26.32	na
Regional sales managers	85	33.49	4.04	Rajneeshi colony members[i]	33	26.30	4.19
Military academy students	1,414	33.41	5.20	Training school recidivists[b]	190	26.25	na
Medical students	648	33.22	4.34	High school "disciplinary problems"	90	26.04	4.94
Business executives	185	33.22	4.38	Reformatory inmates, 0 or 1 prior commitments[j]	111	25.32	na
High school National Science Fair delegates	363	33.02	5.60	Correctional center inmates[k]	837	25.16	6.12
Mathematicians	57	33.00	4.00	College students with eating disorders[l]	14	25.12	na
Police officers	84	32.87	4.08	Sons of fathers with 3 or more symptoms of			
Engineering students	66	32.65	5.40	alcoholism[g]	102	25.07	5.76
White-collar workers[a]	148	32.54	4.77	Exhibitionists, 1 or more other crimes[c]	54	24.70	na
Architecture students	125	32.49	5.42	Alcoholics[m]	78	23.85	5.43
High school "most popular"	90	32.48	5.94	Delinquents, minor offenses[n]	30	23.63	7.21
Architects	124	32.39	4.20	Prison inmates, U.S.A.	196	22.78	5.27
Parole and probation officers	65	32.38	4.87	Vocational institution wards	2,913	22.59	5.53
Pharmacy students	439	32.29	4.56	Probable psychopaths[o]	23	22.59	na

(continued on next page)

TABLE 1 (CONT'D)
46-ITEM CPI So (SOCIALIZATION) SCALE MEANS* AND STANDARD DEVIATIONS FOR MALE SAMPLES INDICATED

More Socialized	*N*	*M*	*SD*	Less Socialized	*N*	*M*	*SD*
Research scientists	45	32.04	4.18	Alcoholics[p]	70	22.49	na
Military officers	343	31.90	4.61	Prison inmates, Canada[q]	168	22.20	5.58
College students	3,236	31.84	5.15	Reformatory inmates, 2 or more prior commitments[j]	119	22.11	na
MBA candidates	71	31.78	4.87	*Juvenile delinquents, first offenders*[r]	32	22.10	na
Social welfare students	254	31.75	4.34	Alcoholics[s]	33	22.08	na
Nursing students	149	31.45	5.47	Juvenile delinquents	76	21.87	5.24
Correctional officers	221	31.28	4.70	Delinquents, heavy users of marijuana[t]	24	21.50	na
High school "most attractive"	88	31.10	5.82	Pathological gamblers[p]	70	21.33	na
High school students	4,162	30.84	5.65	Heroin users[e]	59	21.21	na
Psychology graduate students	623	30.65	4.27	Delinquents, property offenses[n]	31	20.06	6.16
Male norm sample	1,000	29.92	6.08	*Juvenile delinquents, repeat offenders*[r]	16	18.57	na
San Francisco Bay area residents	261	29.68	5.74	Delinquents, violent offenses[n]	30	14.53	5.81

Note.—For samples without standard deviations, means on the 46-item scale were estimated from the longer So scale used in each study.
*Means and standard deviations are reported to two places for the convenience of readers who make serious use of the scale.
[a]Collins (1991). [b]Peterson, Quay, & Anderson (1959). [c]Forgac & Michaels (1982). [d]Kay, Lyons, Newman, Mankin, & Loeb (1978). [e]Kurtines, Hogan, & Weiss (1975). [f]Moore (1983). [g]Searles & Alterman (1994). [h]Hogan, Mankin, Conway, & Fox (1970). [i]Sundberg, Latkin, Littman, & Hagan (1990). [j]Donald (1955). [k]Courtesy of Joyce Carbonell. [l]Edwards & Nagelberg (1986). [m]Cooney, Kadden, & Litt (1990). [n]DeFrancesco & Taylor (1985, 1993). [o]Widom (1977). [p]McCormick, Taber, Kruedelbach, & Russo (1987). [q]Courtesy of Robert Hare, Justus Hayes, and James Hemphill. [r]Kendall, Deardorff, & Finch (1977). [s]Babor, Kranzler, & Lauerman (1989). [t]McGuire & Megargee (1974).

tween-sample comparisons. The highest-ranking sample in Table 1 was composed of 37 entrepreneurs in Ireland, selected by the Irish Management Institute as important contributors to the economic well-being of the country (Barron & Egan, 1968). Then come graduate and professional school students, banking executives, students nominated as best citizens and leaders, and priests. Psychology graduate students, although higher than any of the samples with overt problems in normative behavior, are only slightly above the general population baseline.

In the right-hand column, the first sample, with a mean of 29.30, is comprised of training school wards sentenced for the first time. Repeat offenders from this same institution had a mean of 26.25. The point-biserial correlation for this contrast was .27.

Next come male exhibitionists with no other crimes (Forgac & Michaels, 1982). Their So mean of 29.05 may be compared with that of 24.70 for exhibitionists who had other crimes as well. The difference between the means gives rise to a point-biserial correlation of .34 ($p < .01$).

The 78 students reporting moderate use of marijuana may be compared with the 37 reporting frequent use, with means of 28.71 and 26.32, respectively. Because the means have been adjusted to the 46-item base and because the samples come from different studies, a t test cannot be computed. However, in the study of frequent users (Hogan, Mankin, Conway, & Fox, 1970), a four-step classification was made of all subjects: principled nonusers, nonusers, occasional users, and frequent users. So means, in the same order, were 31.35, 28.11, 27.78, and 26.32, producing an eta coefficient of .39.

Another study of drug use among college students (not reported in the table because findings were given for the sexes combined) compared users and nonusers of alcohol, amphetamines, and marijuana (Goldstein, 1974). For alcohol, 224 students reported no use and 528 reported any use; So scale means were 34.33 and 31.56, respectively, with a t test of 6.81 ($p < .001$) and a point-biserial correlation of .24. For amphetamines, there were 679 with no use and 73 with any use; So means were 32.80 and 25.64, with a t test of 8.46 ($p < .001$) and a point-biserial correlation of .30. For marijuana, 601 nonusers had a mean of 33.56 and 151 users a mean of 28.15, with a t test of 11.29 ($p < .001$) and a point-biserial correlation of .38.

High school students who used or did not use marijuana were studied by Mayer and Ligman (1989). The data are not given in Table 1 because separate analyses were not made for males and females. The total sample was composed of 53 boys and 93 girls. Means on So, converted to a 46-item base, were 31.16 for 81 nonusers, 26.90 for 52 occasional users, and 22.08 for 13 heavy users. The F ratio for the progression of means was significant ($p < .001$).

In another study presenting findings for samples of both sexes, Kay, Ly-

ons, Newman, Mankin, and Loeb (1978) gathered psychological test data on 251 college students in the fall terms and then followed these students for one to three years. Students were placed into one of three categories: continuous nonusers of marijuana, those who did not at any time report use of this substance; switched nonusers, those who reported nonuse at the initial contact but use at a follow-up; and users, those who reported use of marijuana at each inquiry. So scale means for the three categories, adjusted to the 46-item base and from testing at the beginning of the experiment, were for users 28.71, switched nonusers 31.69, and continuous nonusers 32.37. For those who were available for follow-up after three years and tested again, the means on the So scale were for users 25.73, switched nonusers 31.09, and continuous nonusers 31.60. For both times of testing, the users scored significantly ($p < .01$) lower than did either switched or continuous nonusers.

One sample of American psychiatric patients comes next with a mean of 28.71, and just two positions down is another sample of psychiatric patients with a mean of 27.29. Extended comment will be made on this category when data for the female samples are presented.

The 25 college students who were regular shoplifters (Moore, 1983) had a mean of 27.86. Moore also reported a mean of 31.35 for 15 male students who had never stolen in this way. The point-biserial correlation for the comparison was .25, in the expected direction but not statistically significant ($p = .12$).

The 71 sons whose fathers had one or two symptoms of alcoholism may be compared with the 102 whose fathers had three or more symptoms. In this same study (Searles & Alterman, 1994) there were 183 sons whose fathers had no symptoms of alcohol abuse. Mean So scores were 28.57 for sons of symptom-free fathers, 27.42 for sons of fathers with one or two symptoms, and 25.07 for sons of fathers with three or more symptoms. A product-moment correlation between the So scale and dummy weights of 3, 2, and 1 for these categories was .23 ($p < .01$).

Male members of the Rajneeshi colony in Antelope, Oregon come next in the array with a mean of 26.30 (Sundberg, Latkin, Littman, & Hagan, 1990). These men tended to be either social dissidents, opposed to conventional norms and rejecting of ordinary folkways, or social isolates, manifesting mystical and idiosyncratic preoccupations.

Next come training school recidivists, already discussed, followed by 90 high school boys nominated by principals in 15 schools as showing disciplinary problems. First-time or second-time reformatory inmates follow, and then 837 inmates of a federal correctional institution with a mean of 25.16. A small sample of students with eating disorders comes next with a mean of 25.12.

Two steps down is found the first sample of alcoholics (Cooney, Kad-

den, & Litt, 1990), with a mean of 23.85. The two other samples of alcoholics had means of 22.49 (McCormick, Taber, Kruedelbach, & Russo, 1987) and 22.08 (Babor, Kranzler, & Lauerman, 1989). These low values suggest that alcoholism as a diagnosis is indicative of severe impairment of the socialization function as assessed by the So scale. In another paper (Kadden, Cooney, Getter, & Litt, 1989), it was hypothesized that alcoholics with greater pathology would profit more from therapy directed at coping skills (dealing with negative moods, urges to drink, and interpersonal skills) than from therapy aimed principally at interpersonal relationships; for alcoholics with less psychopathology, the effectiveness of the two kinds of therapy should be reversed. With probability of nonabstinence after treatment as a criterion, higher scores on So were in fact related to better outcomes with interactional treatment, and lower scores on So were related to better outcomes with treatment for coping skills. In the paper itself, the So scale was reversed in direction, so that the hierarchical logistic regression curves appear to give the opposite results from those just stated.

In another report on treatment outcomes for these same patients (Cooney, Kadden, Litt, & Getter, 1991), they were again classified into four groups: (1) low So scorers treated for coping skills, (2) high So scorers treated for coping skills, (3) low So scorers treated for interpersonal interactions, and (4) high So scorers treated for interpersonal interactions. In both papers, So was scored so that low values indicated less pathology and high values indicated more. Reversing this so that high So scores indicate better adaptation to norms and low So scores indicate poorer, the two-year treatment outcomes did show that alcoholics with low So scores were helped more by treatment for coping skills, whereas those with high So scores were helped more by treatment for interpersonal relations.

Mayer (1988) presented CPI data for 284 high school students (140 males and 144 females). Means for So are not given in Tables 1 and 2 because separate findings for boys and girls were not reported. For 87 students who were either quasi-alcoholics ($n = 6$) or misusers ($n = 81$), the mean So score adjusted to a 46-item basis was 24.38. For 179 moderate users the mean was 27.69, and for 18 abstainers the mean was 31.32. The F ratio across the five categories of absolute and relative abstainers, moderate users, misusers, and quasi-alcoholics was significant ($p < .001$).

The next sample was composed of 30 young delinquents with minor offenses (DeFrancesco & Taylor, 1993), with a mean of 23.63. These authors reported two other delinquent samples, one composed of delinquents with offenses against property, and a third of delinquents whose offenses involved violence. The means for these last two groups were 20.06 and 14.53. When dummy weights of 3, 2, and 1 were assigned to the three groups, a product-moment correlation of .48 with the So scale was obtained.

DeFrancesco and Taylor also had a control group of boys with no known

occurrence of delinquent behavior (not reported in the table). The So mean for this nondelinquent group of boys was 36.13. The boys in all four subsamples came from low-status families and high-delinquency environments. The high mean for the nondelinquents is comparable to the high mean on So for the "good" boys growing up in delinquency-producing environments in the Ohio studies (see Scarpitti, *et al.*, 1960). When the 30 nondelinquent boys were assigned a dummy score of 4 and included in the total sample of 121 boys, the product-moment correlation with the So scale was .71 ($p <$ .01).

The "probable psychopaths" cited next in Table 1 are from a study by Widom (1977). She placed two advertisements in a Boston counterculture newspaper in 1974 and 1975. The first asked "Are You Adventurous?" and then stated "Psychologist studying adventurous, carefree people who've led exciting impulsive lives. If you're the kind of person who'd do almost anything for a dare and want to participate in a paid experiment, send name, address, phone, and a short biography proving how interesting you are." The second advertisement stated "Wanted: charming, aggressive, carefree people who are impulsively irresponsible but are good at handling people and looking after Number One." A total of 73 responses were received, 45 from men and 23 from women, with the others unclassifiable. Twenty-three men and five women eventually came in for testing. For the 23 men the mean So score, adjusted to the 46-item form of the scale, was 22.59.

The 32 first offenders with a mean of 22.10, ranking next, are from a study (Kendall, Deardorff, & Finch, 1977) in two state training schools; these offenders were contrasted with 16 repeat offenders with a mean of 18.57. The point-biserial correlation for the contrast was .36. The sixth lowest mean in Table 1 (21.50) is for 24 delinquents reporting heavy use of marijuana (McGuire & Megargee, 1974). The fifth lowest mean in Table 1 is for 70 pathological gamblers under treatment in an inpatient program (McCormick, *et al.*, 1987). Their mean of 21.33 on the 46-item scale may be compared with means of 22.49 for 70 alcoholics in the same study and of 26.23 for 70 medical and surgical hospital patients. The gamblers and alcoholics both scored significantly ($p < .01$) lower than the controls, and the gamblers were significantly lower than the alcoholics.

The 59 heroin users studied by Kurtines, Hogan, and Weiss (1975) ranked next with a mean of 21.21. In the study, these men were compared with four other samples: 108 police officers with a mean of 30.07, 26 psychiatric patients with a mean of 28.71, 37 marijuana users with a mean of 26.41, and 142 young delinquents with a mean of 24.70. The F ratio for the analysis of variance across these five samples was 42.6 ($p < .001$), with the heroin users being significantly ($p < .01$) lower than each of the other four samples taken alone.

TABLE 2

46-ITEM CPI So (SOCIALIZATION) SCALE MEANS* AND STANDARD DEVIATIONS FOR FEMALE SAMPLES INDICATED

Sample	*N*	*M*	*SD*	Sample	*N*	*M*	*SD*
A: More Socialized							
Optometry students	50	35.80	3.75	Architecture students	55	32.33	5.10
College majors in education	310	35.33	4.29	Psychology graduate students	405	32.11	4.36
College majors in home economics	176	35.18	3.76	Law school students	40	31.38	4.11
High school National Science Fair delegates	148	34.94	5.43	Female norm sample	1,000	31.33	6.34
High school "best citizens"	90	34.93	5.26	San Francisco Bay area residents	261	31.25	5.14
Police officers[a]	48	34.85	3.55	**B: Less Socialized**			
High school "most popular"	87	34.61	4.91	College students regular shoplifters[c]	25	29.05	na
High school "leaders"	90	34.43	5.55	High school "disciplinary problems"	87	28.07	6.32
Medical school students	90	34.43	4.08	Rajneeshi colony members[d]	34	27.53	5.06
Nursing students	250	34.14	4.84	White-collar criminals[b]	71	27.19	6.20
College students	4,126	34.12	4.74	Psychiatric patients, Scotland[e]	83	27.17	na
Secondary school teachers	20	34.10	4.92	Psychiatric patients, U.S.A.	34	27.03	5.68
Pharmacy students	277	33.86	4.44	Alcoholics[f]	39	26.05	4.77
College counselors	42	33.82	4.12	Abusive mothers[g]	14	25.56	na
Registered nurses	100	33.79	3.94	College students with eating disorders[h]	26	25.27	na
MBA candidates	44	33.70	4.23	Probable psychopaths[i]	5	23.68	na
Mathematicians	41	33.32	3.92	Neglectful mothers[g]	13	23.66	na
University clerical personnel	56	33.18	4.54	Prison inmates	345	23.21	6.10
Social welfare students	446	33.17	4.44	Psychiatric patients with histrionic disorders[j]	20	21.44	na
High school students	4,493	32.88	5.78	Juvenile delinquents	55	20.78	4.88
White-collar workers[b]	172	32.76	6.23				

Note.—For samples without standard deviations, means on the 46-item scale were estimated from the longer So scale used in each study.
*Means and standard deviations are reported to two places for the convenience of readers who make serious use of the scale.
[a]Courtesy of Michael D. Roberts. [b]Collins (1991). [c]Moore (1983). [d]Sundberg, Latkin, Littman, & Hagan (1990). [e]Standage (1990). [f]Cooney, Kadden, & Litt (1990). [g]Friedrich, Tyler, & Clark (1985). [h]Edwards & Nagelberg (1986). [i]Widom (1977). [j]Standage, Bilsbury, Jain, & Smith (1984).

A study of heroin users (Powell, 1973) not cited in Table 1 should be mentioned here. Powell obtained a sample of 12 occasional users of heroin by putting advertisements in two counterculture newspapers in Boston, asking for "chippers" who would be willing to take part in an experiment. At that time, a "chipper" was an occasional heroin user. From some 100 phone calls received in response, about 35 were from regular users, and among the other callers there were 12 occasional users who agreed to come in. Intensive clinical interviews were conducted with each participant, searching for motives and patterns of use. Several tests were given to the subjects, including the CPI. The CPI results were presented as percentile ranks. On the So scale, the ranks for the 12 subjects varied from a low of 1 to a high of 16, with a mean of 4.6. A percentile of 4.6 is roughly equivalent to a raw score of 20 on the 46-item form of the scale, quite close to the mean of 21.21 for the 59 heroin users in the study by Kurtines, *et al.* (1975).

From scanning the full array of 69 samples in Table 1, it can be concluded that, for men, scores of 32 and above are indicative of above-average rectitude and conformity to social norms. Scores of 30 and 31 suggest ordinary normative compliance. Scores of 29 and below begin to suggest problems, moderate down to about 26 and more serious at 25 and below. Among the groups with means less than 25 were chronic alcoholics, prison and reformatory inmates, incarcerated juvenile delinquents, particularly those who were heavy users of marijuana or recidivists, pathological gamblers, heroin addicts, and, at the very bottom, young offenders whose crimes involved violence.

Means for Female Samples

Samples with highest means on the So scale in Table 2 include professional school and college students, high school students attending a national science fair and also students nominated as best citizens, most popular, and leaders by their principals, police officers, and teachers. Psychology graduate students, as was true for males, scored only slightly above the baseline for the general population.

From the right-hand column under **B**, containing samples having some sort of conflict with social norms, the first is a group of 25 college students who admitted to shoplifting regularly (Moore, 1983). Their mean of 29.05 can be compared with a mean of 35.01 for a sample of 15 college women who said they had never indulged in such behavior. The point-biserial correlation for the contrast was .34 ($p = .06$).

High school disciplinary problems, members of the Rajneeshi colony, and white-collar criminals come next with means of 28.07, 27.53, and 27.19. The next two samples are composed of 83 psychiatric patients from Scotland (Standage, 1990) with a mean of 27.17, and 34 psychiatric patients from the CPI archives with a mean of 27.03. Both samples included a vari-

ety of diagnoses, for example, depression, affective disorders, schizophrenia, and borderline personality.

Standage found that all of his patients with personality disorders, as indicated by a structured interview (Loranger, Susman, Oldham, & Russakoff, 1987) for Axis II disorders as defined by the Diagnostic and Statistical Manual of the American Psychiatric Association (1980), had So scale scores less than 28. Standage used a 53-item version of the So scale; the scores he reported have been adjusted to a 46-item basis. He also used three subscales of So, Quality of Life (QL), Problem Behaviors (PB), and Home Life (HL). The first of these corresponds to the Optimism and Self-confidence subscale described above. The second corresponds to the Self-discipline and Cathexis of Social Norms subscale mentioned earlier; and the third corresponds to the Good Memories of Home and Parents subscale already described. Standage did not use a subscale for Interpersonal Awareness and Sensitivity. Patients low on the first two subscales but high on the third tended more toward dependent and avoidant personality disorders than did those who were low on all three subscales. None of the patients scoring high on all three subscales had personality disorders.

In an earlier study (Standage, Bilsbury, Jain, & Smith, 1984), 20 female patients clinically diagnosed as histrionic personality disorders were compared with 20 inpatient controls. The mean So score for the histrionic patients was 21.44 (reported in Table 1), significantly lower than the So mean for controls. Scores on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) did not differentiate between the two groups, and neither did the Extraversion and Neuroticism scales of the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975). However, the Psychoticism and Lie scales of the Eysenck test did show small differences ($p < .05$) between the two samples, with the histrionics scoring higher on the former and lower on the latter.

Later (Standage, 1986), 55 female and 28 male psychiatric patients took the So scale and the Parental Bonding Instrument (Parker, Tupling, & Brown, 1979). Patients with lower So scores (25 or below) described their parents as lacking in affection for the child and their fathers as neglectful. Patients with higher So scores (26 and above) more often described their parents as using optimal child-rearing techniques. Patients with a discharge diagnosis of personality disorder were found only among those with lower scores on So.

Standage and Ladha (1988) related weighted scores on the Personality Disorder Examination structured interview (Loranger, *et al.*, 1987) for 10 male and 10 female psychiatric patients to scores on the So scale. For antisocial personality the rank-order correlation was $-.62$ and for borderline personality *rho* was $-.72$. Putting all of these investigations by Standage and his colleagues together, it appears that low scores on the So scale are associ-

ated with personality disorders in general, specifically including the antisocial, borderline, histrionic, and narcissistic. Standage, in fact, suggested that the So scale, by itself, be used as a screening device for patients within the DSM-III category of "dramatic, emotional, or erratic" personality disorders (Standage, 1990, p. 335).

After the two samples of psychiatric patients in Table 2, with means of 27.17 and 27.03, the next sample is composed of alcoholics ($M = 26.05$). Following that comes a small sample of 14 mothers who abused their children with a mean on So of 25.56, from a study by Friedrich, Tyler, and Clark (1985). These authors also reported So means for 13 mothers who neglected their children (23.66) and for 15 low-income control mothers (29.36). The F ratio for the analysis of variance across the abusive, neglectful, and control mothers was significant ($p < .01$).

College students with eating disorders (Edwards & Nagelberg, 1986) came next, with a mean of 25.27. This value is estimated from the standard score mean (40.54) given in the published paper. A control sample of 25 students free of eating disorders had a standard score mean of 49.52, convertible to a raw score mean on the 46-item scale of 31.26. The t test for the difference between controls and those with eating disorders was 2.88 ($p < .01$), equivalent to a point-biserial correlation of .38.

Finally, American prison inmates from three states had a mean of 23.21, patients with histrionic disorders (as just mentioned) had a mean of 21.44, and 55 incarcerated juvenile delinquents had a mean of 20.78. Means lower than 20 were reported in Table 1 for juvenile repeating offenders and for juvenile delinquents convicted of violent offenses. For female samples no studies of recidivism or violence were discovered in a comprehensive review of publications reporting either the So scale alone or the complete California Psychological Inventory. Had such samples been available, it seems reasonable to expect that So means lower than 20 would occur.

A summary of the data in Table 2 suggests that for women scores of 33 and above are generally indicative of above-average compliance with prosocial norms and convention, scores of 32 to 30 are indicative of ordinary conformity, scores from 29 to 26 are indicative of moderate impairment of the socialization function, and scores of 25 and below are indicative of severe problems. These ranges are for groups. In evaluating the meaning of an So score for an individual, scores on other CPI scales must be brought into the configuration along with biographical and other relevant information.[4]

[4]For analysis and understanding of individual cases, no single scale (including the So scale) can furnish all of the information needed by the interpreter. When the full inventory is used there are various patterns and configurations of scales that provide considerable help in regard to diagnostic and classificatory issues. The best source of information for configural analysis of CPI profiles is found in McAllister's (1988) interpretative guide.

Reactions of Others

In a "conceptual analysis" (Gough, 1965a), such as that being made of the So scale in this paper, the first task is (1) to delineate the theoretical background and rationale of the measure and to stipulate its pragmatic intentions. The analysis then moves to (2) the specific methods used to develop the measure, and follows this with (3) a discussion of its content. The next phases of the analysis deal (4) with relationships of the measure to other scales and to sociodemographic variables and (5) to the performance of groups whose defining properties impart meaning to an array of scores on the new scale. In the text above, these five topics have been discussed. In the present section, attention will be directed to a sixth perspective, the reactions of others; specifically, descriptions and ratings by observers are considered as they relate to higher or lower scores on the So scale.

In Table 3, adjectival descriptions from the 300-item Adjective Check List (Gough & Heilbrun, 1983) associated with scores on the So scale are presented. Findings are given for three samples of men and three samples of women. One pair of samples is comprised of 236 couples, in each of which one partner was described by the other. Dummy weights were assigned, of 1 for each adjective checked as descriptive of the spouse or partner and of 0 for all unchecked adjectives. The 300 items were then correlated with the So scale separately by sex to identify those with appreciable relationships. The mean on So for the 236 men was 29.54, standard deviation 5.76; the mean for the 236 women was 31.33, standard deviation 5.16.

The second pair of samples included 194 men from five fraternities at the University of California, Berkeley and 192 women from three sororities. On the So scale, the men had a mean of 31.28, standard deviation 4.84, and the women had a mean of 34.56, standard deviation 4.27. Each person was described on the checklist by three peers who gave ratings of 2 for very characteristic adjectives, of 1 for characteristic adjectives, of − 1 for uncharacteristic adjectives, and of − 2 for very uncharacteristic adjectives. Neutral or irrelevant terms were left blank. The three checklists for each person were then composited, and the scores for each of the 300 items were standardized by organization. The standard scores for each of the 300 descriptions were then correlated with scores on the So scale separately for men and women.

The third pair of samples included 612 men and 358 women who had been assessed at IPAR. On the So scale the men had a mean of 31.65, standard deviation 5.06, and the women had a mean of 31.94, standard deviation 4.60. Each assessee was described on the Adjective Check List by a panel of 10 staff observers. The observers had no access to test data of any kind; their impressions were based on interviews, observations in Leaderless Group Discussions and other exercises, and on informal communication during breaks, at meals, and during laboratory sessions. Dummy weights of 1 for

TABLE 3
20 Adjectival Descriptions by Observers With Largest Positive Correlations With the 46-item So Scale and 20 With Largest Negative Correlations

Adjectives	Men, Described by			Women, Described by		
	Spouse $n = 236$	Three Peers $n = 194$	10 Staff Members $n = 612$	Spouse $n = 236$	Three Peers $n = 192$	10 Staff Members $n = 358$
Clear-thinking	.18‡	.17†	.03	.12	.19‡	.07
Conscientious	.17‡	.22‡	.20‡	.06	.20‡	.27‡
Conservative	.16†	.25‡	.09†	.06	.26‡	.22‡
Conventional	.16†	.25‡	.09†	.12	.22‡	.23‡
Cooperative	.12	.20‡	.15‡	.18‡	.17†	.12†
Dependable	.07	.32‡	.10†	.10	.19‡	.27‡
Efficient	.20‡	.26‡	.08†	.10	.18†	.14‡
Foresighted	.06	.26‡	.08†	.11	.17†	.05
Honest	.10	.37‡	.10‡	.14†	.18†	.08
Methodical	.09	.24‡	.12‡	.09	.05	.26‡
Mild	.13†	.22‡	.08†	.15†	.05	.10†
Moderate	.10	.32‡	.14‡	.09	.10	.18‡
Modest	.08	.27‡	.10‡	.14†	.11	.12†
Organized	.20‡	.32‡	.20‡	.18‡	.24‡	.23‡
Planful	.05	.27‡	.08†	.02	.19‡	.18‡
Practical	.18‡	.23‡	.01	.06	.18†	.10†
Reasonable	.14†	.35‡	.05	.01	.17†	.14‡
Reliable	.10	.33‡	.15‡	.03	.26‡	.24‡
Tactful	.19‡	.14†	.13‡	.17‡	.12	.09
Wholesome	.04	.28‡	.12‡	.02	.18†	.19‡
Adventurous	−.17‡	−.15†	−.21‡	−.16†	−.12	−.21‡
Careless	−.21‡	−.33‡	−.15‡	−.20‡	−.21‡	−.31‡
Changeable	−.25‡	−.15†	−.19‡	−.25‡	−.19‡	−.29‡
Coarse	−.21‡	−.21‡	−.17‡	−.07	−.20‡	−.25‡
Cynical	−.17‡	−.15†	−.31‡	−.18‡	−.16†	−.21‡
Defensive	−.12	−.28‡	−.20‡	−.15†	−.19‡	−.11†
Disorderly	−.18‡	−.19‡	−.11‡	−.14†	−.28‡	−.34‡
Dissatisfied	−.24‡	−.18†	−.27‡	−.14†	−.18†	−.38‡
Hasty	−.24‡	−.17†	−.07	−.25‡	−.19‡	−.15‡
Headstrong	−.11	−.23‡	−.19‡	−.28‡	−.15†	−.26‡
Impatient	−.14†	−.14†	−.18‡	−.16†	−.12	−.28‡
Impulsive	−.28‡	−.29‡	−.15‡	−.25‡	−.24‡	−.31‡
Rebellious	−.31‡	−.28‡	−.27‡	−.27‡	−.20‡	−.29‡
Reckless	−.30‡	−.31‡	−.21‡	−.33‡	−.24‡	−.32‡
Restless	−.27‡	−.17†	−.25‡	−.17‡	−.16†	−.31‡
Suspicious	−.22‡	−.18†	−.27‡	−.23‡	−.08	−.20‡
Temperamental	−.24‡	−.20‡	−.23‡	−.18‡	−.14†	−.25‡
Touchy	−.17‡	−.18†	−.20‡	−.15†	−.12	−.24‡
Unconventional	−.22‡	−.15†	−.15‡	−.23‡	−.31‡	−.28‡
Undependable	−.02	−.34‡	−.10‡	−.18‡	−.23‡	−.22‡

†$p \leq .05$. ‡$p \leq .01$.

adjectives checked and of 0 for adjectives left blank were used. For any adjective, therefore, the descriptive totals could vary from 0 (a term checked by no observer) to 10 (a term checked by all observers). The sums for each adjective were then correlated with scores on the So scale separately by sex.

The adjectives that had at least three statistically significant ($p < .05$) correlations across the six samples, with at least one of these for either sex, were considered eligible for presentation in Table 3. The 20 descriptions with largest positive correlations and the 20 with largest negative correlations were selected. Adjectives with positive values are associated with higher So scores, and adjectives with negative values are associated with lower So scores.

Six adjectives had significant relationships to So in five of the six analyses: conscientious, conservative, conventional, cooperative, efficient, and mild, and one description (organized) was significantly related to So in all six samples. These seven descriptions constitute the core of what observers will say about persons with above-average scores on the So scale. Except for the term "mild," the descriptions are favorable in tone, and all of them tend to converge on characteristics having to do with rule-following and the internalization of normative sanctions.

The descriptions with four out of six significant relationships to the So scale are dependable, honest, modest, planful, practical, reasonable, reliable, tactful, and wholesome. The remaining descriptions associated with higher scores on So are clear-thinking, foresighted, methodical, and moderate.

Turning to the descriptions with negative correlations, there were 11 with statistically significant ($p < .05$) correlations in all six samples: careless, changeable, cynical, disorderly, dissatisfied, impulsive, rebellious, reckless, restless, temperamental, and unconventional. These terms constitute the core of what observers will say about persons scoring low on So. All 11 descriptions are at least somewhat negative in tone, and all have to do with resistance to or rejection of conventional norms.

The remaining nine descriptions had significant relationships to So in five of the six samples: adventurous, coarse, defensive, hasty, headstrong, impatient, suspicious, touchy, and undependable.

A conceptual continuum may be easily inferred from these 40 descriptions, going from problems in the control of aggressive impulse, volatility, rule-doubting, and undependability at one pole to conventionality, rule-acceptance, self-discipline, and reliability at the other. Psychological problems may be envisaged at either extreme, from acting-out and sociopathic behavior at the low end to blind conformity and undue suppression of impulse at the high end. Clinical experience with the scale, along with the information on mean scores given in Tables 1 and 2, suggests that rule-breaking difficulties of one sort or another may be anticipated as scores fall to 29 or below,

and particularly at 25 or below. Overconformity and suppressive ego control may be anticipated as scores rise to 40 and above.

Q-sort Descriptions

Table 4 presents Q-sort descriptions significantly correlated with scores on the So scale ($p < .01$) for 547 men and 393 women assessed at IPAR. The 547 men had a mean score on So of 31.50, standard deviation 4.95, and the 393 women had a mean of 31.98, standard deviation 4.59. At the end of each assessment weekend, five or six staff members made Q-sort formulations of personality for each assessee on Block's (1961) 100-item California Q-set. The independent Q-sorts were then composited into a single consensual Q-sort and the items rearrayed into the fixed distribution specified by Block. The items in each category of salience were assigned dummy weights of 9 (most salient) down to 1 (least salient or descriptive), and then each Q-sort item was correlated with the So scale.

TABLE 4

FIVE Q-SORT DESCRIPTIONS BY OBSERVERS WITH LARGEST POSITIVE CORRELATIONS WITH THE 46-ITEM So SCALE AND FIVE WITH LARGEST NEGATIVE CORRELATIONS

Q-sort Items†	Total $N = 940$	Men $n = 547$	Women $n = 393$
Is a genuinely dependable and responsible person.	.28‡	.27‡	.30‡
Behaves in an ethically consistent manner; is consistent with own personal standards.	.25‡	.22‡	.30‡
Is fastidious.	.23‡	.21‡	.25‡
Favors conservative values in a variety of areas.	.23‡	.21‡	.27‡
Judges self and others in conventional terms like "popularity," "the correct thing to do," social pressures, etc.	.21‡	.19‡	.24‡
Tends to be rebellious and nonconforming.	−.28‡	−.27‡	−.31‡
Characteristically pushes and tries to stretch limits; sees what he/she can get away with.	−.27‡	−.27‡	−.28‡
Is unpredictable and changeable in behavior and attitudes.	−.26‡	−.22‡	−.34‡
Various needs tend toward relatively direct and uncontrolled expression; unable to delay gratification.	−.25‡	−.19‡	−.34‡
Is self-indulgent.	−.24‡	−.21‡	−.29‡

†From the California Q-set by Jack Block (1961) and published by the Consulting Psychologists Press, Inc., Palo Alto, California. Items cited by permission.
‡$p \leq .01$.

The five Q-sort items with largest positive correlations indicate what observers tend to emphasize in their Q-sort formulations of personality for persons scoring above average on So. The first two items pertain to manifest dependability and responsibility and to consistency between internalized ethical standards and behavior. These are almost prototypic characterizations of what the So scale is intended to measure. The conservatism found so clearly in adjectival descriptions appears in the Q-sort item on this topic, and a conventionality theme also appears in one Q-sort item. A new and unantici-

pated correlate is the item about fastidiousness. The dictionary definition of the term is "difficult to please; delicate to a fault," with a possible extended implication of "refined" and "discriminating." It seems likely that the observers had considerations of meticulousness, scrupulousness, and preciosity in mind rather than the direct implications of delicacy and fussiness. Whatever may have been the phenomenology of the observers, there is an implication in the Q-sort item of overinvolvement in form and convention.

The five items with largest negative correlations include elements of rebelliousness, nonconformity, rule-testing inclinations, unpredictability of behavior, undercontrol of impulse, and self-indulgence. Taken together with the five items associated with higher scores, a conceptual theme can easily be inferred, going from waywardness, irresolution, and self-indulgence at the low pole to ethicality, conformance, and punctiliousness at the high end.

Concluding Comments

The So scale was originally developed as a measure of perspective-taking ability and as a measure for classifying both groups and individuals along a putative continuum of prosocial normative behavior. Role-taking theory was appealed to as a way of conceptualizing the symptomatology of psychopathy and as a way of accounting for the incomplete or flawed internalization of social norms that characterizes wayward and delinquent persons. Attention to this dimensional theme guided the selection of samples for the first set of empirical item analyses. For each sex, these samples included nondelinquents, students nominated as disciplinary problems but not otherwise in known difficulty, and institutionalized young and adult offenders.

As research accumulated in the 1950s and 1960s, it became clear that scores on the So scale would in fact classify groups along the socialization continuum in a way consonant with their known characteristics. Cross-cultural studies also suggested that the psychology of the dimension functioned well in non-English-speaking cultures. By the time of Megargee's Handbook in 1972, extensive research on the So scale documented its predictive and classificatory power in regard to delinquency versus nondelinquency, recidivism, refractory behavior in academic environments, and drug and alcohol abuse at the low end of the scale and positive outcomes among high scorers such as high school and college graduation, college-going, and superior scholastic performance among high-aptitude students. Since 1972, there has been a substantial increase in published research with the So scale, and much more is known about it today than could have been known 20 years ago.

One new development concerns good health and good personal adjustment over the life span. Longitudinal studies have suggested that high scorers on the So scale have the kind of prudent, moderate, and sensible living habits that lead to good health and vigor in middle age and beyond. Over the life span, high scorers on So also tend to follow more traditional sex-role

behavioral patterns than do low scorers. This traditionality, self-restraint, and moderation, however, seems to be accompanied by suppressive ego control and by overconventionality and compliance among very high scorers on the scale.

The defects in interpersonal perspective-taking among low scorers on So are paralleled by attentional deficits for physical and inanimate stimuli. Low scorers focus primarily on central cues, often to the detriment of their awareness of peripheral and incidental information. Another way of putting this is to say that persons with low scores on So have trouble in getting the "big picture" in regard to physical a well as to interpersonal environments. Long-term time perspectives including the envisaging of distant, future goals tend to be associated with higher scores on the scale.

Among the specific psychopathological problems now known to be associated with low scores on the scale are alcohol and drug abuse, recidivism in the correctional system, child abuse and neglect, eating disorders, tendencies toward violence, sexual coerciveness in men, prevarication and cheating, poor self-esteem, and personality disorders including the histrionic, narcissistic, borderline, and antisocial. One very new and intriguing line of research has suggested a significant interaction between scores on the So scale and the effectiveness of two different forms of treatment for alcoholics.

It has also become clearer over the years that certain variables of general importance in psychological testing are either minimally related to the So scale or unrelated. These include socioeconomic status, ethnicity, and test-taking response sets such as acquiescence and social desirability. Gender does make a difference, however, with women tending to score about two points higher than men of comparable age and background. Intelligence, as assessed by standard tests, is modestly related to scores on the So scale among young people and adolescents, but minimally if at all among adults.

When one looks at the reactions of others to persons with higher or lower scores on the So scale, distinctive and highly differentiating patterns emerge. Both men and women with higher scores on the scale tend to impress others as organized, conscientious, conservative, dependable, and as ethically consistent. Persons with lower scores on the scale tend to impress others as changeable, dissatisfied, headstrong, rebellious, and as impulse-dominated.

In spite of all of the work that has been done to date, additional research on many topics would be helpful in clarifying the implications of the scale and in enhancing its utility. For example, longitudinal data on the childhood and familial antecedents leading to higher or lower scores on So would be helpful. There are a few studies of these matters now, but they have tended to use retrospective rather than prospective designs. No studies were found on length of life, but, in view of the heuristic findings on better

health and personal adjustment in midlife, informative findings can be anticipated. The relationships, if any, of scores on So to specific illnesses in the medical as well as the psychiatric realm are worth examining. Accident-proneness is still another topic on which research with the So scale can be recommended. Finally, case studies of individuals scoring very high or very low on the scale are in short supply at the present time. A fundamental question for any psychological measure concerns the ways in which the syndrome or attribute assessed is expressed in either self-actualizing or self-defeating behavioral patterns. Specification of these idiographic patterns can only be achieved by comprehensive studies of individuals.

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