SELF-CONTROL IN CROSS-NATIONAL PERSPECTIVE: AN EMPIRICAL ASSESSMENT OF GOTTFREDSON AND HIRSCHI'S GENERAL THEORY WITHIN AND ACROSS 25 NATIONAL SETTINGS*

CESAR J. REBELLON
University of New Hampshire

MURRAY A. STRAUS
University of New Hampshire

*A previous version of this manuscript presented at the 2004 International Family Violence Conference, Portsmouth, NH and at the 2005 annual meetings of the American Society of Criminology, Toronto, Canada. Direct all correspondence to Cesar J. Rebellon, Department of Sociology, University of New Hampshire, Durham, NH 03824, cesar.rebellon@unh.edu.
ABSTRACT

While Gottfredson and Hirschi’s (1990) general theory of crime has generated extensive research over the past decade, three issues concerning its cross-national applicability remain under-researched. First, research has paid inadequate attention to the reliability and validity of self-control measures in non-Western cultures. Second, research has yet to examine the relationship between parenting and self-control in non-Western cultures. Third, research has yet to test Gottfredson and Hirschi’s assertion that cross-national crime differentials are reducible to aggregate differences in self-control. The present study addresses each of these issues using a six-item self-control scale and two separate crime measures among young-adult respondents from 25 Western and non-Western national settings. Results provide mixed support for the general theory’s predictions. On one hand, results suggest that (1) the six-item self-control scale is generally reliable within both Western and non-Western national settings, (2) the scale generally serves as a valid predictor of crime within setting, (3) an eight-item parental neglect scale predicts self-control within each national setting, and (4) national settings with high levels of average parental neglect demonstrate significantly lower levels of average self-control. On the other hand, national settings with higher levels of average self-reported crime tend do not demonstrate significantly lower levels of average self-control. Overall, results provide strong support for self-control theory within a variety of disparate national settings but call into question the ability of self-control theory to explain cross-national crime differentials.
SELF-CONTROL IN CROSS-NATIONAL PERSPECTIVE: AN EMPIRICAL ASSESSMENT OF GOTTFREDSON AND HIRSCHI’S GENERAL THEORY WITHIN AND ACROSS 25 NATIONAL SETTINGS

Although a wealth of existing research provides substantial support for the core assertions of Gottfredson and Hirschi’s (1990) general theory of crime using U.S. and Western samples, three questions remain about the cross-cultural applicability of the general theory. First, to what degree can self-control be measured reliably outside Western settings and to what degree do such measures predict crime accurately outside Western settings? Second, to what degree does parenting predict self-control outside Western settings? Third, are cross-national crime differentials reducible to aggregate differences in self-control and are such differences, in turn, reducible to aggregate differences in parenting?

The present study assesses each of the above issues using self-report data from young adult respondents in 25 Western and non-Western cultures. We begin by providing a brief overview of Gottfredson and Hirschi’s major predictions, including their assertions about the nature of the self-control concept, the relationship between self-control and crime, and the ability of self-control to explain cross-national variation in crime. We next review the existing empirical literature concerning the reliability of self-control measures in U.S. samples, the validity of self-control as a correlate of criminal behavior in U.S. samples, and the findings of the limited research concerning the cross-cultural reliability and validity of self-control measures. Finally, we use data from the International Dating Violence Study (IDVS) (Straus and Members of the International Dating Violence Research Consortium, 2004) to assess the reliability and validity of a new self-control scale within each of our 25 national settings as well as the relationships among aggregate measures of parenting, self-control, and crime across all 25 national settings.
THE MAJOR PREDICTIONS OF THE GENERAL THEORY

Like other control theories (e.g., Hirschi, 1969), Gottfredson and Hirschi’s general theory begins with the fundamental premise that its dependent variable should not be crime, per se, but that it should instead be conformity. For these theorists, acts of force and fraud are often the most expedient means by which to achieve immediate material gratification. Similarly, “analogous” behaviors like promiscuous sex and the use of chemical substances are often the most expedient means by which to achieve immediate visceral gratification. For Gottfredson and Hirschi, the tendency to engage in such behaviors reflects the universal human pursuit of self-interest and, therefore, needs no special explanation. Instead, these theorists suggest that the major task of criminologists should be seeking the causes of conformity to laws and norms that limit the immediate pursuit of gratification.

According to Gottfredson and Hirschi, the major source of conformity is an individual trait that they call self-control. According to these theorists, those with low self-control tend to possess a number of relatively stable constitutional characteristics that prevent them from forgoing the pleasure of the immediate moment in the interest of long-term benefit. Such individuals, for example, lack “persistence in the course of action” such that they avoid difficult tasks, are drawn to risky or exciting behavior, and prefer physical tasks that put them at risk for injury over mental tasks that involve cognitive concentration (Gottfredson and Hirschi, 1990:89). Likewise, such individuals tend to have a bad temper and to be “insensitive to the suffering” that others experience (Gottfredson and Hirschi, 1990:89-90; see also Grasmick et al., 1993).
Gottfredson and Hirschi (1990) further contend that interpersonal differences in self-control remain relatively stable across the majority of the life-course, even as a given individual’s criminal behavior increases in the teenage years and declines thereafter. However, given their adamant criticism of research suggesting meaningful genetic differences in the predisposition for self-control (e.g., Mednick et al., 1984), these theorists situate the origin of self-control in early childhood socialization. In particular, they suggest that children develop self-control to the degree that their parents set clear rules, monitor their children’s behavior, recognize rule-violations, and sanction such violations consistently within the first decade of their child’s life (see also Larzelere and Patterson 1990; Patterson and Dishion 1985).

While Gottfredson and Hirschi acknowledge cross-cultural variation in crime rates, they dispute the notion that such variation reflects differences in culturally-defined conceptions of law, differences in the fundamental processes that produce crime, or differences in structural variables like poverty (e.g., Neapolitan, 1999). Rather, they state that “cultural variability is not important in the causation of crime” and argue that socialization in early childhood promotes or prevents the development of self-control equally across cultural context (1990:174-175, italics in original). By extension, their general theory suggests that cross-cultural differences in aggregate crime reflect (1) cross-cultural differences in parenting practices; (2) resulting differences in average levels of self-control; and (3) differential opportunity afforded by such factors as variance in aggregate wealth.

EMPIRICAL ASSESSMENTS OF THE GENERAL THEORY

THE RELIABILITY OF SELF-CONTROL MEASURES
One of the most researched facets of Gottfredson and Hirschi’s theory involves the degree to which measures derived from the theory are reliably correlated with one another. Grasmick et al. provide seminal research in this area using a community sample of 395 adults from Oklahoma City to probe six different dimensions of self-control derived from Gottfredson and Hirschi’s theory: (1) impulsivity; (2) a preference for simple tasks; (3) risk-seeking; (4) physicality; (5) self-centeredness; and (6) a bad temper. Of 24 items that they proposed to tap the self-control concept, principle components analysis suggested that 23 clung together to form a reliable and unidimensional self-control scale (α=.81). Further research employed modified versions of the same scale and replicated this finding with other U.S. samples of adults (e.g., Arneklev et al., 1993), college students (e.g., Arneklev et al., 1999), and incarcerated offenders (e.g., Longshore, 1998; Longshore and Turner, 1998; Longshore et al., 1996; Piquero and Rosay, 1998). Although the Grasmick et al. (1993) self-control scale is perhaps the most commonly used, other measures of self-control have also been devised and a number of studies bear on their reliability among U.S. samples. Burton et al. (1999), for example, employed a 12-item scale tapping the impulsivity, temper, physicality, and risk-seeking components of the self-control concept and found an α-coefficient of .64 (see also, Burton et al., 1998). Similarly, Evans et al., (1997) employed an 11-item scale tapping all but the simple task component of self-control and found an α of .61.

Further research has attempted to assess the reliability of self-control measures in Western cultures outside the U.S. Paternoster and Brame (1998), for example, found that five dichotomous items tapping whether a given respondent was prone to act out, daring, lazy, lacking in concentration, and difficult to discipline produced an α-coefficient of .69 in a sample
of working-class British youths (see also Polakowski, 1994). Lagrange and Silverman (1997) used 26 items to produce reliable measures of impulsivity, risk-taking, carelessness, a bad temper, and a present-orientation among a sample of secondary school students in Edmonton, Canada. Although they did not explicitly invoke Gottfredson and Hirschi’s theory, Caspi et al. (1994) found an $\alpha$-coefficient of .79 among measures of the degree to which children were careful, thoughtful, rational, and aversive to impulsivity in a New Zealand birth cohort. Finally, in the most extensive cross-cultural study of Gottfredson and Hirschi’s theory to date, Vazsonyi et al. (2001) found that a variation on the Grasmick et al. (1993) scale produced a highly reliable measure of self-control in Hungary, the Netherlands, Switzerland, and the United States.

Although existing research suggests consistent support for the notion that self-control can be measured reliably across Western cultures, research has yet to produce a consensus concerning the degree to which measures of self-control are best conceived as multidimensional, such that self-control’s constituent components reflect separate, albeit related, constructs. Some researchers argue for multidimensionality on the basis that the overall fit of confirmatory factor analyses can be improved somewhat if particular items load only on one of self-control’s six major components which, in turn, load on a second-order factor (e.g., Longshore et al., 1996; Vazsonyi et al., 2001). Other researchers favor unidimensional models on two separate grounds. First, statistics (e.g., error term correlations) that are sometimes employed to achieve better overall fit in multidimensional models involve an element of arguably post-hoc subjectivity on the part of the researcher (e.g., Longshore et al., 1996; see also Piquero and Rosay, 1998). Second, Gottfredson and Hirschi (1990) are clear in their assertion that the components of self-control form a unidimensional trait (see also Arneklev et al, 1993). Consequently tests of their
theory may be best served by measuring self-control as a composite of its constituent components (Nagin and Paternoster, 1993).

**SELF-CONTROL AND CRIME**

A great deal of research has also examined the validity of self-control measures as correlates of force, fraud, and analogous behaviors. For example, Grasmick et al. (1993) found that their self-control measure was correlated with both force and fraud. Other research has replicated such findings among U.S. samples of adults (e.g., Evans et al. 1997), young adults (Gibbs et al., 1998), adolescents (e.g., Cochran et al., 1994), and incarcerated offenders (e.g., Longshore, 1998; Longshore et al., 1996; Piquero and Rosay, 1998). Burton et al. (1999) found that, following Gottfredson and Hirschi’s predictions, their measure of self-control was also correlated with analogous behaviors like problems in the workplace and substance use (see also Winfree and Bernat, 1998). Finally, a number of studies have found that the relationship between self-control and crime holds net of controls for such variables as age, sex, income, criminal values, and peer association (e.g., Evans et al., 1997; Winfree and Bernat, 1998).

Beyond studies using U.S. samples, cross-cultural studies have found evidence that self-control measures are correlated with crime across a range of Western cultures. Lagrange and Silverman (1997), for example, found that measures of self-control were related to both force and fraud among adolescents in Canada (see also, Sorenson and Brownfield, 1995). Other researchers have found similar results among adolescents in New Zealand (Caspi et al., 1994) and England (Paternoster and Brame, 1998; Polakowski, 1994). Finally, Vazsonyi et al. (2001) found that measures of self-control were related to a range of analogous behaviors including
drinking, drug use, and school misconduct in Hungary, the Netherlands, Switzerland, and the United States.

PARENTING AND SELF-CONTROL

An established research literature suggests that parenting is at least moderately associated with delinquency (e.g., Glueck and Glueck, 1950; McCord, 1979, 1991; Cernkovich and giordano 1987; Larzelere and patterson 1990; Patterson and dishion 1985; Van voorhis et al 1988; Wells and Rankin 1988). Although less research has tested the degree to which self-control mediates this relationship, two studies suggest that it might. Employing a sample of 289 college students, Gibbs et al. (1998) found that retrospective accounts of parental monitoring and discipline were correlated with a 40-item self-control scale, that this scale was correlated with self-reported delinquency, and that a significant relationship between parenting and delinquency was fully mediated by self-control. Using a community sample of adolescents, Hay (2001) found that parental monitoring and discipline were associated with a modified version of the Grasmick et al. (1993) self-control scale, that this scale was associated with self-reported delinquency, and that self-control mediated a portion of the relationship between parenting and delinquency.

SUMMARY

While the above research provides impressive evidence supporting the major assertions of Gottfredson and Hirschi’s theory within Western cultures, existing research has yet to explore
whether the self-control concept can be measured reliably in non-Western cultures, whether self-control is associated with criminal behavior in such cultures, or whether parenting reliably predicts self-control in such cultures. Likewise, research has yet to examine Gottfredson and Hirschi’s assertions that cross-cultural variation in crime reflects cross-cultural variation in aggregate levels of self-control and that cross-cultural differences in self-control reflect cross-cultural differences in parenting practices. The present study assesses each of these issues.

METHODS

THE INTERNATIONAL DATING VIOLENCE STUDY

The present data come from university students in 25 different nations who participated in the International Dating Violence Study (IDVS) (Straus and Members of the International Dating Violence Research Consortium, 2004). The IDVS is being conducted by members of a research consortium located at universities in most major world regions. Of the 25 national settings providing data for the present study, three are North American, two are Middle-Eastern, 11 are European, two are Latin American, and five are Asian, and two are Southern Pacific, thus allowing for a preliminary investigation of the validity of Gottfredson and Hirschi’s (1990) general theory in both Western and non-Western settings. A detailed description of the study, including the questionnaire and all other key documents, is available via the world wide web at: http://pubpages.unh.edu/~mas2. In all sites, appropriate authorities reviewed all procedures used to protect the rights and safety of the participants, including explaining the purpose of the study,
explaining the potentially sensitive nature of questions concerning sexual relationships, and explaining the voluntary nature of participation.

The members of the International Dating Violence Research administered the dating violence questionnaire to students at their respective university. There is a core questionnaire that each member of the Consortium translated and then back-translated to maintain “conceptual equivalence” (Straus, 1969) across the sites. In addition, the questionnaire has space for members to add questions to measure variables that are uniquely important for their site or to measure constructs to test a theory of particular interest. The number of cases at each site ranged from 135 to 4549, with a mean of 707. The questionnaires were usually administered in classes taught by members of the consortium and in other classes for which they could make arrangements. Almost all were Criminology, Psychology, and Sociology undergraduate courses. Thus, the present data come from a convenience sample. The results describe what was found for students in those classes and cannot be taken as representative of each nation’s overall population or of all students at each university.

Of all students that participated in the present study, only those who had been in a dating relationship lasting a month or more were used for this article. This varied from 100% to less than a third in Pune, India, where dating is not a common cultural practice. In addition, as in other surveys, not every student answered every question. To respect the privacy and the voluntary nature of participation, the instructions emphasized that respondents were not required to participate and could simple turn in a blank questionnaire if they desired. Less than two percent chose that option. The completed questionnaires were examined for questionable response patterns, such as reporting an injury but not reporting any assaults as having occurred or cases with an implausible response such as attacking partner with a knife or gun 10 or more
times in the past year. About 4% of the cases were identified as questionable and were removed from the sample.

MEASURES

SELF-CONTROL

The IDVS contains six items that correspond roughly to each of the six dimensions of self-control (see Grasmick et al., 1993). Each ranges from 1 (strongly disagree) to 4 (strongly agree). The first item is a measure of self-centeredness that asks respondents how much they agree with the statement: “I don’t think about how what I do will affect other people.” The second is a measure of risk-taking based on whether respondents agree with the statement: “I often do things that other people think are dangerous.” The third is a measure of temper that asks respondents whether they agree with the statement: “There is nothing I can do to control my feelings when my partner hassles me.” The fourth is a rough measure of physicality drawing on Gottfredson and Hirschi’s (1990) assertion that those with low self-control are likely to suffer disproportionately from accidents. Specifically, it probes whether respondents agree with the statement: “I often get hurt by things that I do.” The fifth is a rough indicator of impulsivity probing whether respondents agree with the statement: “I have trouble following the rules at work or in school.” The sixth builds on Gottfredson and Hirschi’s assertion that those with self-control take into account the long-term consequences of their acts. Specifically, it is based on an item gauging whether respondents agree with the statement: “I have goals in life that I try to reach.” Descriptive statistics for each item, for the self-control scale, and for all other variables
are presented in Table 1. Given that prior research (e.g., Paternoster and Brame, 1998) has successfully measured self-control with as few as five dichotomous items, the present six-item scale seems a viable means of measuring the self-control concept.

(Table 1 about here)

Criminal History

The IDVS contains eight-items gauging self-reported criminal history. The response categories for each item ranges from 1 (strongly disagree) to 4 (strongly agree). There are two items for property crime (theft of things worth more than $50 and theft of money) and two for violent crime (hit or threatened to hit someone and attacked someone to hurt them). Each is asked for two separate periods in a respondent’s life-course (prior to age 15 and following age 15), making a total of eight items. A property crime sub-scale is comprised of four items (each of the above two property crime items measured for two separate periods in the life-course. A total violent crime sub-scale is comprised of four items reflecting the above two violent crime items measured at the same two periods in the life-course.

Parental Neglect

The IDVS data do not provide extensive measures of the degree to which parents set clear rules, monitor their children, recognize rule violations, and sanction their children consistently for such violations. Nonetheless, “Gottfredson and Hirschi (1990) assume these
conditions will not develop unless parents are emotionally or in other ways invested in the child” (Gibbs et al., 1998:49; see also Snyder and Patterson, 1987). As such, we use the IDVS’s eight-item parental neglect scale as a proxy for good parenting. Certain of these items (e.g., parents made sure I went to school) tap elements of direct control that have been used in the existing delinquency research (e.g., Gibbs et al., 1998; Hay, 2001; McCord, 1979, 1991; Rankin and Kern, 1994; Sorenson and Brownfield, 1995). Others (e.g., parents provided comfort) tap elements of parental support that have been found to load on one latent factor with measures of parental monitoring and sanctioning (see Wright and Cullen, 2001).

**STATISTICAL CONTROL VARIABLES**

Given the possibility of cultural variance in willingness to self-disclose socially undesirable behavior, as well as recent research suggesting that self-control may influence response accuracy (Piquero et al., XXXX) the Social Desirability scale of the Personal And Relationships Profile (Straus and Mouradian, 1999) was used as a control. This is a 13-item scale adapted from Reynolds short form of the widely used Crowe Marlowe social desirability scale (Reynolds, 1982). The scale items are behaviors and emotions that are slightly undesirable but true of almost everyone, such as “I sometimes try to get even rather than forgive and forget” and “There have been occasions when I took advantage of someone.” The more of these items the respondent denies, the more likely a respondent is to avoid admitting the undesirable criminal behaviors which are the focus of this study.

Given that age and sex are reliably and substantially related to criminal behavior across culture (e.g., Gottfredson and Hirschi, 1990; Moffitt et al., 2001), we control for each in the
analyses that follow. We code age in years and we code sex as “1” for males and “0” for females. Given that differential association is also among the most reliable correlates of criminal behavior (see Akers, 1998), we control for a two-item measure of criminal peers. Each item ranges from 1 (strongly disagree) to 4 (strongly agree). The first probes whether respondents “have friends who commit criminal acts” and the second probes whether respondents “spend time with criminal friends.”

**Aggregate Variables**

For the purposes of modeling differences in crime and self-control across the 25 national settings, the analyses that follow employ aggregate measures of the above variables based on each variable’s average value among all respondents within each national context. For the dichotomous variable, sex, each national setting’s average value represents the proportion of respondents within that setting that were male. Descriptive statistics for all aggregate variables across each of the 25 national settings are presented at the bottom of Table 1.

**Analytic Strategy**

The analyses that follow are divided into three sets. The first set assesses the reliability of the six-item IDVS self-control scale within each of the 25 national settings. It employs confirmatory factor analysis using a weighted-least-squares algorithm designed for ordinal measures to estimate each item’s independent factor loading on the overall self-control scale. Following Browne (1984), it bases these estimates on the polychoric correlation matrix of
observed item values among the respondents within a given culture. In addition, it provides overall fit statistics for the six-item model of self-control in each of the 25 national settings. These include the $\chi^2$-statistic, the root-mean-square-error-of-approximation (RMSEA), and the traditional $\alpha$-coefficient.

The second set of analyses assesses the validity of the self-control scale as a predictor two crime-types within each of the 25 national settings. Assuming that our self-control scale is reliable across settings, Gottfredson and Hirschi’s theory asserts that the scale should predict multiple forms of crime net of statistical controls for such variables as age, sex, and differential association. In addition, the second set of analyses examines the degree to which parental neglect predicts self-control within each of the same settings.

The third set of analyses assesses the degree to which Gottfredson and Hirschi’s theory accounts for cross-national variation in aggregate measures of self-reported crime. In particular, it examines the degree to which differences in average self-control predict average crime across national settings net of controls for aggregated age, sex, and criminal peers. Likewise, it examines the degree to which mean levels of parental neglect predict mean levels self-control across national setting, again controlling for sex, age, and differential association.

**RESULTS**

**RELIABILITY OF THE IDVS SELF-CONTROL SCALE WITHIN NATIONAL SETTING**

Table 2 presents the results of 25 confirmatory factor analyses assessing the unidimensionality of our six self-control items within each national setting. Specific national settings are listed vertically at the left of the table, along with the number of respondents who
provided data for all six items in each setting. Sample sizes range from a low of 133 respondents in Iran to a high of 3778 in the U.S. Factor loadings for particular items within each setting are listed horizontally with each row’s loadings corresponding to one of the 25 national settings.

(Table 2 about here)

Overall, results in Table 2 suggest that the IDVS self-control scale is reliable across setting. Of 150 factor loadings (six items by 25 settings), 147 are statistically significant. In 22 of the 25 national settings, all six self-control items load to a statistically significant degree. In the remaining three settings, five of six self-control items load to a statistically significant degree. Of the six items comprising the IDVS self-control scale, four load to a statistically significant degree in all 25 national settings, one (temper) fails to load significantly in only one setting, and one (goals) fails to load significantly in two settings. Mean factor loadings range from a high of .68 (rules) to a low of .37 (goals).

Comparing the above results to those of prior research suggests that the IDVS items do as well a job of representing one underlying construct. Specifically, the average factor loading across all 150 cells presented in Table 2 is .51. This compares favorably with the results of prior research using more elaborate measures. Arneklev et al. (1999), for example, estimated a second-order factor model using items derived from the Grasmick et al. (1993) self-control scale and found second-order loadings that range from a high of .63 (impulsivity) to a low of .25 (physicality). Moreover, as compared to the present mean loading of .51, Arneklev et al. (1999) found an average second-order loading of .40 among adults and .42 among college students.
Turning to the overall fit of the six-item IDVS self-control scale, six of the 25 national settings yielded non-significant $\chi^2$ values. This suggests that the six-item model fits the data well in only about one-quarter of the national settings. At the same time, the $\chi^2$ statistic is sensitive to sample size such that larger samples produce greater error regardless of a model’s true fit to the data. For this reason, we supplemented the $\chi^2$ statistic with the RMSEA, for which lower values represent a better fit to the data. Of the 25 national settings included, seven yielded RMSEA values under .05 and another 14 yielded RMSEA values between .05 and .10. Finally, to provide a more traditional measure of overall reliability, we supplemented the latter two statistics with $\alpha$-coefficients. Across all 25 national settings, the average $\alpha$-coefficient is .53, ranging from a high of .69 in Australia to a low of .35 in India.

Comparing the above results to those of other studies suggests that the present measure’s reliability is comparable to that of previously employed self-control measures. On one hand, because $\alpha$ is partly a function of the number of items in the scale, studies with a large number of items have higher $\alpha$-coefficients. Grasmick et al. (1993), for example, achieved an $\alpha$-coefficient of .81 with a variant of their original scale. On the other hand, studies using 11 or 12 item self-control scales have achieved reliabilities of .61 (Evans et al., 1997) and .64 (Burton et al., 1999; Burton et al., 1998). Moreover, some studies have found that scales of impulsivity and risk-taking with $\alpha$-coefficients as low as .45 (Longshore et al., 1996; Piquero and Rosay, 1998) do as good or better at predicting criminal behavior than more reliable scales that include all six self-control components. In sum, then, Table 2 suggests that self-control can be measured with at least moderate reliability in both western and non-western national settings using the IDVS self-control scale.
SELF-CONTROL AND CRIMINAL HISTORY WITHIN NATIONAL SETTING

Tables 3 and 4 examine the degree to which the IDVS self-control scale predicts criminal history within each of the 25 national settings. As is typical of self-reported crime measures, our criminal history measures are positively skewed. In particular, our violence measure is censored such that between 18 and 65 percent of respondents in each setting reported no history of violence. Similarly, our property crime measure is censored such that between 30 and 76 percent of respondents in each setting reported no history of property crime. Given that these non-normal distributions violate a key assumption of OLS regression, OLS analyses presented in Tables 3 and 4 employ the natural log of each criminal history measure. Further, we supplement each OLS analysis with a Tobit regression analysis (see Long, 1997) that corrects for the censored nature of dependent variables, but whose coefficients must be weighted by the proportion of uncensored responses prior to interpretation.

Examine OLS results from Table 3, the IDVS self-control scale is associated with violence to a statistically significant degree in all 25 national settings. In particular, the absolute value of standardized coefficients linking self-control to violence in these 25 settings ranges from a low of .12 to a high of .43. For purposes of comparison, our criminal peers scale also bears a significant relation to violent crime all 25 settings with standardized coefficients ranging from a low of .10 to a high of .33. While the mean absolute value of the standardized OLS coefficient linking self-control and violence across all 25 settings is .27, the mean standardized
OLS coefficient linking criminal peers and violence is .21. Moreover, the standardized self-control coefficient is of greater magnitude than the standardized criminal peers coefficient in 19 of the 25 settings. It therefore appears that self-control does a somewhat better job of predicting violence in the present study than does an individual’s association with criminal peers. While OLS results might be called into question given the non-normal nature of our violence measure, Tobit results for each national setting are substantively identical to those of OLS results suggesting a robust inverse relationship between the IDVS self-control scale and violence within each of the 25 national settings.

(Table 4 about here)

Table 4 repeats the analyses from Table 3 using property crime as a dependent variable in place of violence. Examining OLS results from Table 4, the IDVS self-control scale is associated with property crime to a statistically significant degree in 21 of 25 national settings. In particular, the absolute value of standardized coefficients linking self-control to property crime ranges from a non-significant low of .08 in Portugal and Romania to a significant high of .34 in Mexico. In comparison, our criminal peers scale also bears a significant relation to property crime in 21 of the 25 settings with standardized coefficients ranging from a non-significant low of .06 to a significant high of .30 in Sweden. While the mean absolute value of the standardized OLS coefficient linking self-control and property crime across all 25 settings is .23, the mean standardized OLS coefficient linking criminal peers and property crime is .21. In contrast to results for violence, the standardized self-control coefficient is of greater magnitude than the standardized criminal peers coefficient in only 14 of the 25 settings. It therefore appears
that self-control does only a marginally better job of predicting property crime in the present study than does an individual’s association with criminal peers. Tobit results for each national setting are substantively identical to those of OLS results for 24 of the 25 settings, the exception being Germany, whose Tobit coefficient is statistically significant. Given controls for age and sex in all OLS and Tobit models from Tables 3 and 4, it would appear that self-control is substantially and significantly associated with crime in both Western and non-Western settings net of demographics. Given the control for social desirability, which was significantly and negatively related to crime in the vast majority of models from Tables 3 and 4, it would appear that the relationship between self-control and crime is not merely an artifact reflecting some individual’s tendency greater or lower willingness to self-disclose undesirable behavior.

PARENTING AND SELF-CONTROL WITHIN NATIONAL SETTING

Table 5 explores the degree to which parental neglect within each national setting predicts self-control among a given setting’s respondents. Given that the IDVS self-control scale is not censored, only OLS estimates are presented. Consistent with the general theory’s prediction, parental neglect is significantly and inversely related to self-control among respondents in 24 of 25 national settings. Even the exception, Greece, demonstrates a non-significant inverse relationship between these measures. Moreover, the magnitude of the standardized OLS coefficient linking parenting and self-control is generally quite strong, averaging an absolute value of .26, higher than that linking self-control and property crime, and only slightly lower than that linking self-control and violence. Once again, these relationships obtain net of controls for age, sex, and social desirability.
DIFFERENCES IN CRIME AND SELF-CONTROL ACROSS NATIONAL SETTING

Table 6 provides a preliminary assessment of the degree to which cross-national differences in aggregate crime can be explained by cross-national differences in aggregate self-control as well as the degree to which cross-national differences in aggregate self-control can be explained by cross-national differences in aggregate parental neglect. Whereas the unit of analysis in prior tables is the individual respondent, the unit of analysis in Table 6 is the national setting. Beginning with the first column of Table 6, OLS estimation suggests that national settings with higher proportions of male respondents demonstrated significantly higher levels of aggregate violence, but that national settings with higher levels of average self-control did not differ significantly from counterparts in average violence.

Given the small sample of only 25 national settings, however, it may be the case that outliers exert undue influence over the results of OLS analysis. To explore this possibility, the second and third columns of Table 6 present the results of two further regressions providing two alternative means of adjusting for the influence of outlying values. In particular, estimates from the second column are based on regression estimates weighted by the number of respondents in each national setting following such precedents as Pratt and Godsey (2003). Estimates from the third column are based on Huber/White estimates of robust standard errors as outlined in Hamilton (2003). Although results based on both estimation methods suggest a significant relationship between average criminal peer association and violence across the 25 national settings, they fail to unveil a significant relationship between average self-control and average violence. Results from the fourth through sixth columns repeat the above analyses for property
crime in place of violence, yielding largely similar results suggesting that aggregate differences in property crime across nation may be partly attributable to aggregate differences in criminal peer associations but not aggregate differences in self-control.

The final three columns of Table 6 examine whether aggregate differences in self-control can be attributed to aggregate differences in parental neglect. In contrast to the first six columns of Table 6, the final three columns suggest consistent support for Gottfredson and Hirschi’s theory. In particular, all three estimation methods provide reliable evidence that those national settings characterized by higher average levels of respondent-reported parental neglect tend also to be characterized by lower average levels of self-control. Further, these results obtain net of a reliably inverse relationship between the percentage male respondents in a national setting and that setting’s average self-control.

**DISCUSSION**

Gottfredson and Hirschi’s (1990) influential theory of crime is among the most researched over the course of the past decade, but existing research remains incapable of assessing the theory’s applicability in non-Western settings or its ability to explain aggregate differences in crime across geographic region at the macro-level. In an effort to address these issues, the present study provides the most extensive cross-national test of the theory to date. It begins by examining the degree to which the six-item IDVS self-control scale is reliable within 25 different Western and non-Western national settings. It then examines the degree to which the IDVS self-control scale predicts two forms of crime within each setting as well as the degree to which an 8-item parental neglect scale is associated with self-control in each setting. Finally,
it provides a preliminary assessment of the degree to which Gottfredson and Hirschi’s theory, previously tested only at the micro-level, can explain aggregate differences in crime.

Results at the micro-level provide impressive support for the generality of Gottfredson and Hirschi’s theory within a range of disparate Western and non-Western settings. Aside from meeting with reliability estimates among U.S. respondents that are comparable to those found in prior studies employing a similar number of items, the scale appears generally reliable in a range of national settings. To be certain, reliability varied from setting to setting. Results clearly suggest, for example, a weaker reliability of the scale among Iranian respondents versus U.S. or Australian respondents. Nonetheless, despite variance in the degree to which the six IDVS self-control items clustered together in different settings, it remains the case that at least five of the six items clustered together to a statistically significant degree in all 25 settings.

Beyond suggesting that the elements of self-control tend to cluster together in a range of disparate national settings, the present results provide impressive support for two further predictions of Gottfredson and Hirschi’s theory. First, self-control is significantly associated with at least one form of crime in all 25 national settings and with multiple types in the vast majority. This finding emerged net of demographic controls and net of what was generally a significant independent influence of respondent willingness to self-disclose undesirable information. Similarly, an 8-item parental neglect scale was significantly associated with self-control in all 25 national settings, again net of statistical controls. Although explicit measures of parental monitoring and sanctioning are not available in the IDVS, Hirschi (1995) explicitly discusses the concept of parental neglect as one manifestation of poor parenting and prior research suggests items gauging neglect to load on one underlying factor with items gauging monitoring and sanctioning. Thus, despite measurement limitations, we are impressed with
strength of the support for the general theory’s micro-level predictions, and perhaps more impressed with the consistency of this support in such disparate national settings.

Despite the consistent failure of micro-level analyses to disconfirm Gottfredson and Hirschi’s theory, the present results must clearly be interpreted in the context of the convenience samples that provided data for the present study. As mentioned above, the present respondents were not sampled at random from their respective universities, let alone their respective nations. Nonetheless, granting that the present respondents are likely linked culturally as members of the educated class in their respective nations, respondents from different settings are, at a minimum, embedded within very different cultural contexts representing 75% of the major world ‘civilizations’ enumerated by such cultural scholars as (XXXX).\(^1\) Moreover, far from being of like-mind concerning such cultural issues as the role of women in society or appropriate dating practices, respondents from different settings demonstrated extremely divergent attitudes about such issues despite their common status among the educational elite in their respective nations. For example, XXXX. At a minimum, therefore, the present study provides important preliminary evidence that the self-control concept should not be viewed merely as an artifact of Western culture nor as a concept that can reasonably be excluded from cross-national criminological research within different cultures.

At the same time, despite impressive support for the general theory as an important explanation of \textit{individual-level} variation in crime among respondents from disparate national contexts, results provide only mixed support for Gottfredson and Hirschi’s assertions concerning the nature of cross-national differentials in \textit{aggregate} crime. In particular, these theorists argue that such differentials are essentially reducible to differences in the average level of self-control

\(^1\) XXXX delineates 8 civilizations: Sinic, Japanese, Hindu, Islamic, Orthodox, Western, Latin American, and African. Of these, the present study lacks data for the Japanese and African civilizations.
among the individuals comprising a given nation’s culture or population and that aggregate self-control, in turn, is reducible to aggregate differences in parenting practices. The present study concludes with a preliminary test of these predictions and, while it finds support for the latter notion, it fails to find support for the former notion. Given that the valence of the coefficients linking self-control and crime at the aggregate level were consistently negative, it might be argued that they failed to yield statistical significance as a result of the small sample employed for aggregate-level analyses. Likewise, it may be the case that aggregate differences in self-control were artificially attenuated by the non-representative nature of the sampling strategy, as discussed previously. At the same time, it should be noted that numerous coefficients were statistically significant in aggregate analyses despite the small sample size. It may therefore be the case that, just cross-national researchers would be best served by acknowledging the potential importance of the self-control concept across nations at the individual-level, control theorists would be best served to acknowledge the possibility that aggregate-level crime may not be entirely reducible to individual differences.

Given the general failure of the present data to disconfirm Gottfredson and Hirschi’s major predictions, several avenues merit attention in future research. First, given the limited availability of cross-cultural data concerning the etiology of crime in general, and Gottfredson and Hirschi’s theory in particular, future research might attempt to collect more representative data from a range of western and non-western cultures. Second, such data might include more extensive measures of self-control, perhaps drawing from the Grasmick et al. (1993) self-control scale, with which to further test the reliability and validity of the self-control concept across culture. Third, such data might be used to further investigate whether cross-cultural variation in crime can be explained by variation in aggregate levels of self-control. Fourth, despite
Gottfredson and Hirschi’s (1990) advocacy of cross-sectional data like those employed herein, further research might benefit from longitudinal data collection, particularly when examining the relationship between parenting practices and self-control. Absent such data, and again despite Gottfredson and Hirschi’s (1990) argument to the contrary, a correlation between parenting and self-control may plausibly be viewed as evidence that those with innate tendencies toward impulsivity tire their parents to the point of inconsistent parenting or neglect.

In conclusion, we agree with Gottfredson and Hirschi’s assumption that general theory is preferable to non-general theory, so long as its predictions garner empirical support. The present study provides such support for the general theory of crime by suggesting that its parsimonious account of crime may apply to both Western and non-Western cultures. Some will undoubtedly disagree, instead suggesting that the causes of crime vary by culture or that structural characteristics like poverty are more critical for an understanding cross-cultural difference in crime than are relatively static variables like self-control. Others may reasonably fashion arguments suggesting that cross-cultural differences in criminal behavior reflect more than just the sum of individual-level variables like parenting or self-control. Whether they agree or disagree with Gottfredson and Hirschi’s particular formulation, we encourage further theorizing and research to explore the causes of crime in cross-cultural perspective.
REFERENCES

Akers, Ronald L.

Arneklev, Bruce J., Harled G. Grasmick, and Robert J. Bursik, Jr.


Baumrind, Diana

Burton, Velmer S., Jr, Fancis T. Cullen, T. David Evans, Leanne Fiftal Alarid, and R. Gregory Dunaway

Burton, Velmer S. Jr., T. David Evans, Francis T. Cullen, Kathleen M. Olivares, and R. Gregory Dunaway

Caspi, Avshalom, Terrie E. Moffitt, Phil A. Silva, Magda Stouthamer-Loeber, Robert F. Krueger, and Pamela S. Schmutte

Cernkovich, S.A. and P.C. Giordano

Cochran, John K., Peter B. and Bruce J. Arneklev

Evans, T. David, Francis T. Cullen, Velmer S. Burton, Jr., R. Gregory Dunaway, and Michael L. Benson

Gibbs, John J., Dennis Giever, and Jamie S. Martin

Glueck, Sheldon and Eleanor Glueck

Hamilton, Lawrence

Hay, Carter


LaGrange, Teresa C. and Robert A. Silverman

Lazalere, R.E. and Gerald R. Patterson

Long, J. Scott

Longshore, Douglas

Longshore, Douglas and Susan Turner

Longshore, Douglas, Susan Turner, and Judith A. Stein

McCord, Joan

Mednick, Sarnoff A., W. H. Gabrielli, and B. Htchings

Moffitt, Terrie E., Avshalom Caspi, Michael Rutter, and Phil A. Silva

Nagin, David S. and Raymond Paternoster

Neapolitan, Jerome L.

Patterson, Gerald R. and T.J. Dishion

Paternoster, Raymond and Robert Brame

Piquero, Alex R. and Andre B. Rosay

Piquero accuracy of self-control response.

Polakowski, Michael

Pulkkinnen, Lea

Pratt, Travis C. and Timothy W. Godsey

Rankin, Joseph H. and Roger Kern

Reynolds, W.M.

Rosembaum, J.L.

Sorenson, Anne Marie and David Brownfield

Snyder, J. and Gerald R.Patterson

Straus, Murray A.

1998 The personal and relationships profile (PRP). Durham, NH, University of New Hampshire, Family Research Laboratory. Available at: http://pubpages.unh.edu/~mas2/

Straus, Murray A. and Members of the International Dating Violence Research Consortium

Straus, Murray A. and V.E. Mouradian

Van Voohis, P., Frank T. Cullen, R.A. Mathers, and C.G. Garner

Wells, L.E. and Rankin, J.H.

Winfree, L. Thomas and Frances P. Bernat

Wright, John Paul and Francis T. Cullen