# **Extending the General Theory of Crime to "The East:" Low Self-Control in Japanese Late Adolescents**

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This study examined the measurement of low self-control as well as the low self-control-deviance relationship in a sample of N=335 Japanese late adolescents. Participants completed the Grasmick  $et\ al.$  low self-control instrument and the Normative Deviance Scale (NDS). Findings indicated that the low self-control measure was a valid and reliable indicator of low self-control among male and female Japanese late adolescents and that it was multi-dimensional. Furthermore, the study provided evidence that low self-control was consistently related to diverse measures of deviance, ranging from trivial to more serious norm-violating behaviors (e.g., assault). Finally, in a series of comparisons of partial unstandardized regression coefficients between Japanese and U.S. late adolescents, the study found that the low self-control-deviance relationship was invariant across all measures of deviance with the exception of alcohol use. Findings are discussed in terms of their importance for cross-cultural/cross-national predictions made by the General Theory of Crime.

**KEY WORDS:** deviance; delinquency; cross-cultural; cross-national.

#### 1. INTRODUCTION

In a meta-analysis covering 21 studies (based on 17 samples) completed during the first 10 years following the publication of Gottfredson and

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Hirschi's General Theory of Crime (1990), Pratt and Cullen (2000) completed a comprehensive evaluation of empirical investigations of the theory. Their study which mostly focused on the self-control-crime relationship, provided impressive empirical support for the theory. More specifically, they concluded that the low self-control effect consistently exceeded 0.20 across studies, that low self-control was a consistent predictor of both crime and crime analogous behaviors, and that the relationships between low self-control and deviance were practically identical in comparisons between males and females as well as between adolescents and adults. They also added that although the theory "warrants a measure of acceptance . . . it is unlikely that Gottfredson and Hirschi's perspective can claim the exalted status of being the general theory of crime" (2000, p. 953).

A key feature of Gottfredson and Hirschi's theoretical work is that specified relationships between self-control and deviance will reach beyond the North American continent, beyond samples largely collected on majority individuals in Canada and the United States. In effect, theoretical propositions suggest that these relationships should be found across time and place. This is something that numerous writers have alluded to (e.g., Piquero and Rosay, 1998). However, with the exception of a very few studies subsequently reviewed, this new empirical challenge has not been met. In fact, Gottfredson and Hirschi devote an entire chapter of their seminal book to culture and crime, where they carefully elaborate why self-control theory should apply across cultural settings both within countries as well as across countries. This may be one of their most daring theoretical propositions, as it stands such a high probability of falsification. Yet, they reject positivist approaches to comparative criminology and note that

Science typically assumes that proper explanations of phenomena are produced by inductive examination of differences and their correlates. First one determines that, for example, the United States has a higher homicide rate than Japan. Then one locates the cultural (or perhaps structural) differences between Japan and the United States that accounts for homicide differences (1990, p. 173).

Part of the issue why the theory and the low self-control-deviance relationship should replicate across cultural and national boundaries is that, according to Gottfredson and Hirschi, comparative criminology is not a substantive discipline, a theoretical worldview, but rather simply a method that can be effectively used to replicate and generalize findings and theoretical propositions (Vazsonyi, 2003). In other words, this explanation of crime and deviance is not culture bound. Thus, we might predict that variability in self-control will also account for variability in deviance, in

criminality, in any behaviors that are considered norm-violating independent of cultural or national context.

For example, stealing something from someone, large or small, violates a basic social contract between human beings. Similarly, beating someone up who then requires medical attention also violates what perhaps all human beings consider morally proper conduct. Of course, this does not speak to how societies respond to such behaviors and whether this response in some fashion promotes or discourages this conduct. On the other hand, writing bad checks has little meaning in the large majority of societies, even though bad check writing is considered criminal behavior in the United States, for example. Similarly, stealing automobiles may also be difficult to comprehend in a society where there are no cars. Therefore, according to Gottfredson and Hirschi (1990), comparative studies that seek to replicate empirical findings in other national contexts, or that seek to falsify a theoretical proposition, must employ indicators and measures of crime and deviance that are not bound to local legal codes, not bound to local customs of dealing with specific behaviors, but rather, that are simply behavioral indicators of norm-violations, and in this sense, free of cultural definitions or meanings. In other words, consistent with the General Theory, normviolations are self-interested acts found anywhere, in any cultural or national context, that can be characterized by a here and now orientation and by little regard for consequences of the behaviors.

The current investigation further extended empirical tests of basic tenets of the General Theory beyond North America and even Europe. More specifically, this study examined the dimensionality of low self-control as well as the self-control-deviance relationship in a sample of Japanese late adolescents. In addition, it also compared the importance of self-control in Japanese and U.S. late adolescents. In the following sections, relevant literature for the current study is reviewed.

# 1.1. Cross-National Comparative Studies and "Open Issues"

Few published comparative studies that explicitly examined the General Theory have been completed outside Canada and the United States, in part due to the complexity and costs of cross-national comparative work (Armer, 1973). Some exceptions include work by Vazsonyi *et al.* (2001) that examined both the dimensionality as well as the low self-control-deviance relationship in adolescent samples from four countries, namely from Hungary, the Netherlands, Switzerland, and the United States. This study

found that the low self-control measure developed by Grasmick et al. (1993) was multi-dimensional—six dimensions or factors as originally hypothesized and specified by Gottfredson and Hirschi. This is both consistent with some work on different samples (e.g., Arneklev et al., 1999; Longshore et al., 1996) as well as inconsistent with other work that has argued for unidimensionality of self-control (e.g., Piquero and Rosay, 1998). Arneklev et al. (1999) have eloquently suggested that this central, apparently unresolved controversy may be largely the result of different interpretations of Gottfredson and Hirschi's original work. In fact, they point out that two of the small number of psychometric studies that have tested the dimensionality of Grasmick et al.'s self-control measure actually used the same data set; whereas Longshore et al. (1996) found support for multidimensionality, Piguero and Rosay (1998) provided evidence supporting unidimensionality. However, the majority of independent (different samples) empirical investigations of this issue that have both conceptually and empirically tested this question, provided support for multidimensionality of the self-control construct (for a recent study on Spanish youth, see also Romero et al., 2003). Because the dimensionality of self-control remains a debated topic in the literature, conceptually and empirically, both unidimensional and multidimensional models were tested in the current investigation.

Another study conducted outside the North American continent explicitly tested portions of the General Theory. It is important to point out that this effort, as well as the others subsequently reviewed, was not directly comparative across two or more nations, nor did it use the same measurement of self-control as found in the majority of studies in this area of research (Pratt and Cullen, 2000). Based on a sample of n = 527 Chinese adolescents, Wang et al. (2002) examined the relationships between impulsivity and measures of social control and substance use as well as deviant behaviors in a sample of youth in Southern China. The authors found no evidence of a direct relationship between impulsivity and deviance measures, though they found some evidence of an indirect one mediated through social control constructs (e.g., family attachment). It is worth noting that both deviance measures were rather narrow in conceptualization and in measurement. The deviant behavior measure included three items assessing fighting, stealing, and lying, while the substance use measure tapped tranquilizer, heroin, and opium use during the previous six months; in addition, the authors provided no reliability information on the scales.

In an additional effort, which again did not explicitly examine the full breadth of the General Theory, Killias and Rabasa (1997) assessed the predictive utility of a single item measure of self-assessed spontaneity (tendency to act impulsively vs. carefully) for violent behavior based on a sample of n = 513 Swiss adolescent males. In their empirical model, which included a

large number of other predictors such as weapon carrying, aggression, police contacts, pro-violence attitudes, victimization, school violence, parental monitoring, and physical constitution, the single item low self-control measure was a modest predictor of violent behaviors in some models, and not statistically significant in other models tested.

Finally, in a study that tested the relative importance of social learning, social control, and self-control constructs for substance use, Hwang and Akers (2003) also examined the importance of the different self-control dimensions (based on single item indicators) for tobacco and alcohol use in a sample of n=1,012 adolescents from Korea. Their findings from regression analyses with all six indicators of self-control dimensions generally provided evidence that the self-control-substance use relationships were in the conceptually expected direction for both tobacco and alcohol use, and that self-control (all six dimensions) explained about 12% of the variance in substance use measures. However, the preference for simple tasks and for physical activity items were non-significant when entered together with all six low self-control indicators in the analyses.

A second topic related to the General Theory which continues to generate a fair amount of discussion in the literature, in addition to the dimensionality issue, is the gender issue, namely the proposition by Gottfredson and Hirschi that no differences should exist in the selfcontrol-deviance relationship. Whereas Gottfredson and Hirschi were very specific in their theoretical predictions, empirical tests that have followed have provided mixed evidence. Some studies have also examined the dimensionality issue by sex in Confirmatory Factor Analyses (CFAs) and have found fairly consistent evidence that the factor structure of selfcontrol generally replicates in male and female study participants (e.g., Piquero and Rosay, 1998; Vazsonyi et al., 2001). On the other hand, other work has also provided evidence to the contrary. For example, Longshore and colleagues' (1996) multi-dimensional model of self-control fit male study participants, but not female participants. In addition, still other investigations have also simply examined potential similarities or differences by sex in the self-control-deviance relationship. Both Longshore et al. (1996) as well as Vazsonyi et al. (2001) found few differences in this relationship by sex, although neither study employed a rigorous comparative analysis to address this issue. Finally, a number of investigations have found mixed evidence on the similarity claim by Gottfredson and Hirschi (e.g., Burton et al., 1998; Gibbs and Griever 1995; Keane et al., 1993; Nakhaie et al., 2000; Wood et al., 1993). Therefore, in the current investigation, we addressed both the dimensionality of self-control as well as the self-control-deviance relationships in male and female Japanese late adolescents.

# 1.2. Why Japan?

# 1.2.1. The Cultural Difference Approach

It is well accepted that Japan enjoys comparatively low crime rates based on both official data (e.g., Interpol or the UN) and victimization data (e.g., Cruszczynska, 2002). The import of studying Japanese adolescents is the idea that cultural differences may provide insights into the etiology of crime and deviance. This approach was, and perhaps still is, central to most previous cross-cultural and cross-national comparative studies (e.g., Clinard's [1978] study of Switzerland or Adler's [1983] collection of essays on low crime cultures). Its premise is that if we compare the etiology and behaviors of individuals in one culture high in crime, such as the United States, with individuals in a culture characterized by low crime rates, such as Japan, we can gain new insights into the etiology of crime and deviance—in this case, why crime rates are so high in the United States and comparatively low in Japan (for similar arguments, see Crystal, 1994; Grasmick and Kobayashi, 2002). In this sense, based on this cultural differences approach. we would not only expect to find differences in rates of crime and deviance, but also in the relationships between theoretically relevant constructs and variables, since these account for the observed differences in crime.

This comparative rationale and approach was recently employed in a comprehensive study that examined similarities and differences in responses to violence in the United States and Japan. Dussich *et al.* (2001) collected data from n = 563 Americans and n = 908 Japanese adults to examine differences in responses to crime, fear of crime, weapon ownership, and attitudes towards law enforcement; they were interested in demonstrating "both national uniqueness and cross-cultural contrasts" (2002, p. 9). As expected, the authors found substantial cultural differences in perceived fear of crime, use of aggression, use of weapons, and law enforcement. The authors concluded that "not only is the threshold of violence different, but so too are the context in which the threat occurs, how it is defined, and the range of options citizens in each country give themselves to respond" (2002, p. 150).

Other work has also attempted to isolate precisely what cultural differences might account for the observed differences in crime and deviance. For example, Komiya's (1999) "cultural study of the low crime rate in Japan" qualitatively examined cultural factors that might be implicated in lower crime rates. This cultural-difference approach used by Komiya identified four broad classes of constructs which have been implicated in Japan's low crime rate, namely environmental (demographic and geographic factors), progress (economic and educational factors), justice (legal and administrative factors), and cultural factors (formal and informal social

controls). The essay concluded by illustrating cultural differences between Japan and the West, which by implication, are responsible for differences in crime rates, and perhaps also for differences in the etiology of crime.

The cultural difference approach which was the basis for Adler's (1983) seminal study that focused on ten countries characterized by low levels of crime, has also yielded important insights. Based on the Durkheimian notions of anomie and synnomie, Adler hypothesized that

all ten countries appear to have developed some form of strong social control, outside and apart from the criminal justice system. The social control systems of which I speak do not aim to control by formal restraint. Rather, they transmit and maintain values by providing for a sharing of norms and by ensuring cohesiveness. Among those social control systems, there is, above all, the family (p. 130).

Thus, she concluded that what made these ten countries unique was their social control mechanism that ultimately restrained individuals sufficiently to yield comparatively lower rates of crime and deviance. A similar idea can be found in Braithwaite's theory and empirical work which suggests that countries vary in levels of crime due to social and national qualities and differences. According to Braithwaite's (1989) reintegrative shaming theory, the reason crime rates are (or at least were) comparatively lower is that Japanese individuals are encouraged to conform through powerful shaming mechanisms:

It would seem that sanctions imposed by relatives, friends or a personally relevant collectivity have more effect on criminal behavior than sanctions imposed by a remote legal authority. I will argue that this is because repute in the eyes of close acquaintances matters more to people than the opinions or actions of criminal justice officials (p. 69).

In other words, the more communitarian a society is, the more powerful personal and interpersonal sanctioning systems that exist, the lower the rates of norm-violating conduct will be.

# 1.2.2. Low Self-Control Across Nations

Gottfredson and Hirschi (1990) clearly depart from the cultural difference approach in their analysis of comparative criminology. They predict that the self-control construct will hold a central place of importance in the understanding and prediction of crime and deviance across different national contexts. In fact, they suggest that the importance of self-control should not vary across time and place. The meaning of this statement is first that self-control, once established early in life

through socialization experiences in the family, will remain fairly stable over the lifecourse. Empirical data have provided some support (e.g., Turner and Piquero, 2002), although surprisingly few studies have examined this central proposition by the General Theory. Secondly, the implication of the prediction is that the manner in which self-control and deviance are associated will vary little in different cultural groups within the United States as well as in different national groups across countries. Again, some empirical investigations have substantiated this (e.g., Vazsonyi *et al.*, 2001). However, studies have not focused extensively on low crime countries, such as Japan, to test whether this theoretical prediction by the General Theory finds support.

Conceptually, the General Theory makes no claims about the levels of crime—in other words, the theory does not dispute that entire nations vary in levels of crime and deviance committed. However, the theory does make a claim regarding the importance of self-control in all societies, whether characterized by low or high levels of crime and deviance. One might argue that if levels of self-control are so much higher in cultures such as Japan, due to much higher levels of restraint, then we would expect that we are unable to predict deviance in the same manner as we do in the United States for instance. This could be the cultural difference approach. On the other hand, Gottfredson and Hirschi predict that regardless of "level" differences across societies in measures of crime and deviance and in measures of self-control, self-control will explain variability in deviance, independent of time and of place.

Clearly, Japan provides a context that differs in most cultural, social, and even demographic respects from the United States and Europe. Yet, it is also an industrialized nation, a market economy, subject to the same pressures as found in "Western" countries. In fact, recent evidence from Japan also suggests that crime rates and public perceptions of the level of criminal activity have undergone dramatic changes. In a thorough and intriguing analysis of the interplay between the media, fear of crime, official crime statistics, and criminal justice practices, Hamai and Ellis (2002) found that Japan is facing a moral panic regarding crimes:

All of these recent and rapid changes in Japan have put enormous strain on established Japanese informal mechanisms of mutual control and surveillance ... The impact of globalisation may well be that informal mechanisms are now questioned, and that in a time of increasing insecurity, Japanese people are looking to reestablish feelings of security through formal control and more severe punishments (p. 17).

They conclude that although levels of crime are still comparatively lower based on victimization surveys than in other Western nations, crime

rates have increased since 1999; in tandem, according to the authors, public perception of crime based on media portrayals, reporting practices, police scandals, and anti-violence initiatives have all contributed to these dramatic changes in levels of reported crimes.

The current investigation extended empirical tests of the General Theory to a cultural context which was dramatically different, both culturally and in observed rates of official crime and deviance. More specifically, it tested the dimensionality of the Grasmick *et al.* self-control measure by sex. It also examined a higher order self-control latent trait both in a Japanese and a U.S. sample. Secondly, the study tested the relationship between low self-control and deviance in Japanese male and female late adolescents. Third, it also examined the associations between low self-control and a variety of deviant acts to study the versatility concept proposed by self-control theory. It is important to note here that deviance was assessed as a lifetime measure because theoretically, Gottfredson and Hirschi (1990) suggest that this yields the same information about norm-violating behaviors as more frequent measures. They note

We can observe offenders every hour of every day and still not know the causes of their behavior ... In the cross-sectional view of crime, differences across people and their life circumstances are sufficiently stable over time that day-to-day variability is uninteresting or likely to be nothing more than measurement error (p. 251).

Finally, the study also tested potential similarities or differences in the low self-control-deviance relationships between Japanese and U.S. late adolescents.

## 2. METHODS

#### 2.1. Procedures

Anonymous self-report data were collected following a standard data collection protocol which also included a brief description of the study's purpose; the study was approved by a university institutional review board. The questionnaires were administered in classrooms by teachers who had received extensive verbal and written instructions. Students had a 1–2 h period to complete the survey. The same procedures were used for data collection in the U.S. sample. The instrument was translated from English to Japanese and back-translated by bilingual translators. Surveys were examined by additional bilingual translators, and when translation was difficult or ambiguous, consensus was used to produce the final translation.

## 2.2. Sample

# 2.2.1. Japanese Sample

Data were collected in a medium size city in Japan. Participants, all health sciences majors, included n=335 late adolescents attending a university. Fourteen classes that included between 20 and 30 students were invited to participate in the study. In each classroom, between 1 and 3 students were absent on data collection days; no students declined participation. Students ranged in age between 18 and 23 (mean age = 19.7 years; 67.2% female, representative of class compositions); 20 additional cases were omitted from the original sample (n=355) to allow a focus on late adolescents in the current study because of no information about their age or because they were older than 23 years.

# 2.2.2. U.S. Sample

Data in the United States were also collected in two adjacent medium size cities from students attending a major university and a community college (Vazsonyi et al., 2001). Identical data collection procedures and instruments were used for this purpose. At the university, students from fifteen Freshman and Sophomore level classes representing a wide variety of majors across the campus (e.g., Architecture, Geology, Mathematics, Theater, and Engineering) were surveyed. In these classes, n = 1.596 surveys were distributed and n = 1,188 (74%) were completed. Twenty-six surveys were incomplete or invalid, leaving a final sample of n = 1.162 (73% response rate). At the community college, teachers of social science courses were solicited for participation in the study by the dean. Two hundred and fifty-eight surveys were distributed and 84 (33%) students declined participation or turned in incomplete or invalid surveys, leaving a final sample of n = 174 (67% response rate). The final U.S. sample used in the current investigation included n = 1,285 late adolescents (mean age = 20.0 years, 61.4% female, 88.2% Caucasian); however, sample size slightly varied in analyses due to missing data.

#### 2.3. Measures

# 2.3.1. Background Variables

Participants answered questions about their sex, age (birth month and year), parental marital status, and socioeconomic status (SES). The SES measure was adapted from Hollingshead's (1975) job classifications; six job classifications were used to assess SES by rating the job category of the

primary wage earner of the family: laborer, semiskilled, clerical, semiprofessional, professional, and executive. Parental marital status was only reported for descriptive purposes and was not used in subsequent analyses.

# 2.3.2. Low Self-Control

Low self-control was assessed with Grasmick *et al.*'s (1993) measure. This scale included 24 items in six subscales (impulsiveness, simple tasks, risk seeking, physical activity, self-centeredness, and temper). Responses were given on a 5-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 = strongly agree). This was revised from the 4-point Likert-type scale originally used by Grasmick *et al.* (1993), but it was consistent with other previous studies using this scale (e.g., Longshore *et al.*, 1996; Piquero and Rosay, 1998; Vazsonyi *et al.*, 2001). Scale items were averaged to compute subscale scores and the total self-control score. Reliability estimates indicated that the final scale used in the current study, namely a revised 22-item version as suggested by Vazsonyi *et al.* (2001) was internally consistent ( $\alpha = 0.81$  for males, and  $\alpha = 0.78$  for females; see Table I). Both the original 24-item and the 22-item scales were tested in the study, and findings that

**Table I.** Mean and Standard Deviation of Low Self-Control and Deviance Scales by Sex (Japanese Sample)

|                   | Males (n = 110) |      |        |        | Females $(n = 225)$ |      |      |        |        |      |
|-------------------|-----------------|------|--------|--------|---------------------|------|------|--------|--------|------|
|                   | M               | sd   | Skew 1 | Skew 2 | α                   | M    | sd   | Skew 1 | Skew 2 | α    |
| Impulsiveness     | 2.88            | 0.70 | -0.07  |        | 0.56                | 2.68 | 0.65 | 0.04   |        | 0.48 |
| Simple Tasks      | 2.86            | 0.70 | -0.16  |        | 0.66                | 2.78 | 0.66 | 0.11   |        | 0.66 |
| Risk Seeking      | 2.76            | 0.77 | 0.25   |        | 0.72                | 2.27 | 0.72 | 0.20   |        | 0.75 |
| Physical Activity | 3.12            | 0.74 | -0.42  |        | 0.65                | 2.91 | 0.70 | 0.19   |        | 0.69 |
| Self-Centeredness | 2.32            | 0.74 | 0.66   |        | 0.66                | 1.98 | 0.57 | 0.32   |        | 0.54 |
| Temper            | 2.27            | 0.83 | 0.62   |        | 0.81                | 2.05 | 0.75 | 0.37   |        | 0.75 |
| Low Self-Control  | 2.71            | 0.45 | -0.42  |        | 0.81                | 2.46 | 0.39 | 0.27   |        | 0.78 |
| Vandalism         | 1.43            | 0.51 | 1.72   | 1.03   | 0.74                | 1.17 | 0.25 | 2.19   | 1.55   | 0.49 |
| Alcohol Use       | 2.66            | 0.93 | 0.20   | 0.57   | 0.71                | 2.27 | 0.94 | 0.73   | -0.05  | 0.79 |
| Drug Use          | 1.16            | 0.36 | 3.70   | 2.50   | 0.72                | 1.03 | 0.13 | 4.63   | 4.23   | 0.46 |
| School Misconduct | 1.63            | 0.64 | 1.64   | 0.62   | 0.72                | 1.38 | 0.46 | 1.91   | 1.09   | 0.66 |
| General Deviance  | 1.48            | 0.51 | 1.75   | 0.89   | 0.74                | 1.24 | 0.27 | 1.99   | 1.21   | 0.52 |
| Theft             | 1.24            | 0.46 | 2.81   | 1.92   | 0.75                | 1.11 | 0.28 | 4.15   | 2.96   | 0.63 |
| Assault           | 1.60            | 0.64 | 1.02   | 0.47   | 0.68                | 1.12 | 0.30 | 3.57   | 2.76   | 0.57 |
| Total Deviance    | 1.57            | 0.42 | 1.85   | 0.90   | 0.91                | 1.32 | 0.25 | 1.46   | 0.93   | 0.86 |

Skew 1 is the original, untransformed variable; skew 2 is the log transformed value. SE's for both original and transformed deviance scores: male SE = 0.23; female SE = 0.16.

are subsequently presented in the paper indicated that the 22-item scale provided a better fit. Thus, the use of the 22-item scale was largely an empirical decision based on better fit in CFAs. This solution was tested in the first place because in previous work based on samples from four countries, the 22-item solution also provided the best fit to the data.

#### 2.3.3. Deviance

Deviance was measured by the 55-item Normative Deviance Scale (NDS, Vazsonyi *et al.*, 2001; for similar measures, see Espiritu *et al.*, 2001). The NDS assessed a broad spectrum of deviant activities and norm-violating conduct independent of cultural definitions of crime and deviance (see Appendix A). The current investigation examined seven subscales of the NDS (vandalism, alcohol use, drug use, school misconduct, general deviance, theft, and assault) as well as a total deviance measure (all 55-items combined). Consistent with arguments by Gottfredson and Hirschi about the measurement of crime and deviance, responses for all items in the NDS identified lifetime frequency of specific behaviors on a 5-point Likert-type scale. Individual items were averaged to compute subscale scores and a total deviance score. Reliability coefficients of the deviance subscales were above  $\alpha = 0.68$  for males and  $\alpha = 0.46$  for females (see Table I for additional details).

## 3. PLAN OF ANALYSIS

For reasons of economy, we decided to present the results from all analyses based on the Japanese data set, but only select findings from the U.S. sample. This decision was also made because practically identical analyses have been presented previously on the U.S. sample (Vazsonyi et al., 2001). In the first step, descriptive statistics were computed for low self-control and deviance measures by sex for the Japanese sample. Secondly, a series of CFAs were completed by sex on the low self-control scale to further examine the factor structure and dimensionality in the Japanese sample. Model fit was evaluated by the standard chi-square fit statistics as well as the Comparative Fit Index (CFI) and the root mean square error of approximation (RMSEA) (Browne and Cudeck, 1993; Loehlin, 1992). For the CFI, a fit between .90 and 1.0 is considered acceptable (Bentler, 1992). An RMSEA value of less than 0.05 demonstrates excellent fit, while a value between 0.05 and 0.08 suggests reasonable fit (Browne and Cudeck, 1993). Third, to examine potential similarities or differences between the Japanese and U.S. samples, multi-group CFAs were completed by sex, where we compared Japanese males to U.S. males and Japanese females to U.S. females. For this purpose, we used a

second order model as proposed by Arneklev *et al.* (1999) because we were primarily interested if the six different dimensions of self-control were similar or different by country. Therefore, this difference test involved comparing the structural paths from each of the self-control elements or dimensions to the second order self-control latent construct, where each score was constrained to equality. Final model fit was evaluated by comparing the default model where these scores were estimated versus the multi-model, where scores were constrained.

Fourth, multiple regression analyses were completed separately by sex in the Japanese sample and included age and SES as controls on an initial step. Because of positive skew in the dependent variables, we log transformed all deviance measures for these analyses. Osgood et al. (2002) have recently provided additional evidence that logarithmic transformations or computing the square root values of positively skewed dependent variables, such as indicators of deviance, are quite adequate to address non-normality. In fact, in their recent study, they found evidence that using more sophisticated analyses, such as tobit regressions, may not provide additional information or more accurate findings unless one models interactive terms or curvilinear relationships (see also Vazsonyi et al., 2001). In a final step, unstandardized partial regression coefficients (b) were compared between Japanese and U.S. late adolescents to examine the similarity or differences between these coefficients in the two groups. For this purpose, we used a series of z-tests as suggested by Cohen and Cohen (1983; see also Paternoster et al., 1998 critical value: 196).

### 4. RESULTS

## 4.1. Descriptive Analyses

Initial descriptive analyses (Japanese sample) on parental marital status indicated that most parents of participants were currently married (90% for males and 86% for females). The following frequencies were reported for parental SES, males and females respectively: (1) laborer, 5.6% / 2.3%; (2) semiskilled, 4.6% / 3.2%; (3) clerical: 7.4% / 11.7%; (4) semiprofessional, 27.8% / 23.9%; (5) professional, 14.8% / 22.1%; and (6) executive, 39.8% / 36.9%.

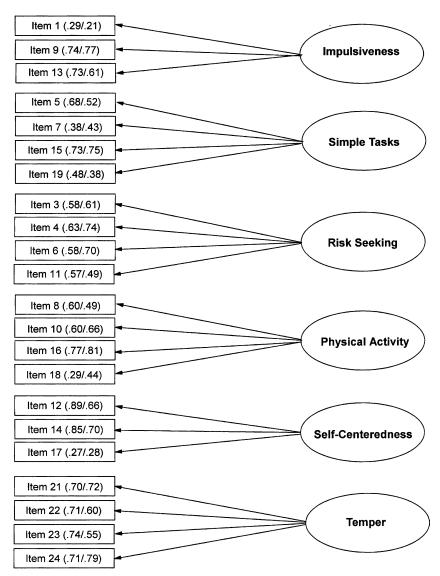
Table I includes the mean, standard deviation, and skew for low self-control and measures of deviance by sex. As previously indicated, dependent variables were log transformed to reduce skew; these transformed variables were used in regression analyses as well as in comparative tests by country. As expected, the low self-control measure was higher for males (M = 2.71,

sd = 0.45) than females (M = 2.46, sd = 0.39). Similarly, males (M = 1.57, sd = 0.42) reported more total deviance than females (M = 1.32, sd = 0.25). This finding was consistent across all deviance measures (see Table I).

#### **4.2. CFAs**

CFAs were completed for male and female Japanese late adolescents using Amos 4.0 (Arbuckle and Woethke, 1999). Table II presents the findings from the CFAs by sex. In order to proceed conservatively in model testing, both considering factor structure and dimensionality issues based on previous work and a priori conceptualization, a series of CFA models were tested in the following order: 24-item, 1 factor (model 1); 22-item, 1 factor (model 2); 24-item, 6 factors (model 3); 22-item, 6 factors (model 4); and finally, 22-item, 6 factors, 2 correlated errors (model 5). In previous work by Vazsonyi et al. (2001) based on samples from four different countries, findings indicated that a 22-item model of low self-control fit the data better than the 24-item scale. In addition, based on modification indices to further improve model fit, two pairs of conceptually justified error terms were allowed to correlate. Whereas numerous modifications could have been added to the final model, for reasons of parsimony and conceptual clarity, only two within factor terms were correlated. Thus both 24-item and 22-item solutions were tested.

Fit for model 1 was poor, both for males and females (males: CFI = 0.92, RMSEA = 0.13; females: CFI = 0.94, RMSEA = 0.12). Similarly, Model 2 also indicated poor fit (Males: CFI = 0.93, RMSEA = 0.14; females: CFI = 0.94, RMSEA = 0.12). In model 3, fit improved to an acceptable level, and the change was statistically significant. This provided evidence of the multi-dimensional nature of the low self-control construct (males: CFI = 0.97, RMSEA = 0.09; females: CFI = 0.98, RMSEA = 0.07). Model fit in model 4 indicated a statistically significant improvement over model 3 (males: CFI = 0.98, RMSEA = 0.08; females: CFI = 0.98, RMSEA = 0.07). Finally, a sixfactor, 22-item model with two correlated error terms, each within factor, was tested. Specifically, items 3 and 4 as well as items 5 and 7 were allowed to correlate. Again, the changes in model 5 were statistically significant in comparison to model 4, and this model provided the best fit for both males (CFI = 0.98, RMSEA = 0.08) and females (CFI = 0.99, RMSEA = 0.06), though the improvement was small. Figure 1 presents model 5 graphically, and it includes standardized factor loadings. Table II also includes additional alternative fit indices, including the  $\gamma^2/df$ 



*Note.* Male/female factor loadings. All six factors were allowed to intercorrelate; in addition, items 3 and 4 as well as items 5 and 7 were correlated.

Fig. 1. Final model (Model 5) of the self-control construct with factor loadings by sex.

|                               | $\chi^2$ | $\Delta \chi^2$ | df  | $\Delta df$ | $\Delta\chi^2/df$ | CFI  | RMSEA |
|-------------------------------|----------|-----------------|-----|-------------|-------------------|------|-------|
| Males                         |          |                 |     |             |                   |      |       |
| Model 1 (1 factor, 24 items)  | 743.01   |                 | 252 |             | 2.95              | 0.92 | 0.13  |
| Model 2 (1 factor, 22 items)  | 623.03   | 119.98          | 209 | 43          | 2.98              | 0.93 | 0.14  |
| Model 3 (6 factors, 24 items) | 434.61   | 188.43          | 237 | 28          | 1.83              | 0.97 | 0.09  |
| Model 4 (6 factor, 22 items)  | 337.26   | 97.35           | 194 | 43          | 1.74              | 0.98 | 0.08  |
| Model 5 (6 factors, 22 items, | 327.65   | 9.61            | 192 | 2           | 1.71              | 0.98 | 0.08  |
| 2 errors)                     |          |                 |     |             |                   |      |       |
| Females                       |          |                 |     |             |                   |      |       |
| Model 1 (1 factor, 24 items)  | 999.43   |                 | 252 |             | 3.97              | 0.94 | 0.12  |
| Model 2 (1 factor, 22 items)  | 863.71   | 135.72          | 209 | 43          | 4.13              | 0.94 | 0.12  |
| Model 3 (6 factors, 24 items) | 519.08   | 344.63          | 237 | 28          | 2.19              | 0.98 | 0.07  |
| Model 4 (6 factor, 22 items)  | 381.37   | 137.71          | 194 | 43          | 1.97              | 0.98 | 0.07  |
| Model 5 (6 factors, 22 items, | 362.11   | 19.25           | 192 | 2           | 1.87              | 0.99 | 0.06  |
| 2 errors)                     |          |                 |     |             |                   |      |       |

Table II. CFAs of Low Self-Control Scale by Sex (Japanese Sample)

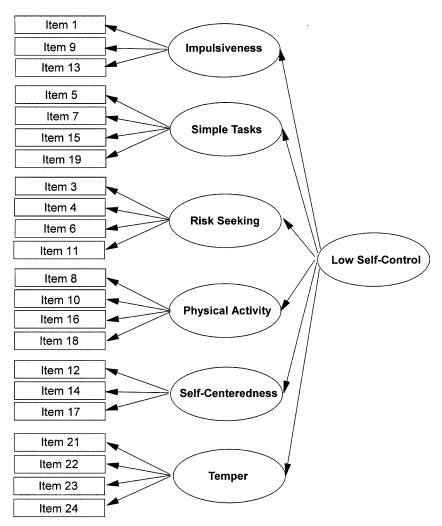
All  $\Delta \chi^2$  scores were statistically significant at p < 0.01.

ratio (Rowe *et al.*, 1994); this ratio was less than 2 in the final model (model 5) in both male and female samples.

# 4.3. Multi-Group Second Order CFAs

In an effort to examine the similarities or differences in the dimensionality and factor structure between Japanese and U.S. late adolescents, two multi-group second order CFAs were completed, one for males and one for females (see Fig. 2). Six structural paths identifying the second order self-control construct were tested (one fixed to 1 as required by AMOS and 5 fixed to equality). AMOS compares nested models, one default model with free paths, and one comparative model with the fixed paths. Fit of both models was compared by computing difference statistics, including a  $\Delta \chi^2$ , to assess whether the two models differed significantly. A lack of difference between the two models would indicate great similarity in the structural paths. For the purpose of these second order CFAs, we used the final model (Model 5) from CFAs, in both samples. Previous work also established that this model provided the best fit for the U.S. sample (Vazsonyi *et al.*, 2001).

Initially, second order CFAs on male adolescents from both countries provided further support for the conceptualization of self-control as a higher order construct based on six "lower level" latent dimensions. Data from both countries fit this model reasonably well (Japanese youth:  $\chi^2$  [201] = 346.88;  $\chi^2/df = 1.73$ ; CFI = 0.97; RMSEA = 0.08; U.S. youth:  $\chi^2$ 



Note. Items 3 and 4 as well as items 5 and 7 were correlated.

Fig. 2. Second order confirmatory factor analysis of low self-control construct.

[201] = 540.76;  $\chi^2/df$  = 2.69; CFI = 0.99; RMSEA = 0.06). The same was found for data from female youth (Japanese youth:  $\chi^2$  [201] = 400.17;  $\chi^2/df$  = 1.99; CFI = 0.98; RMSEA = 0.07; U.S. youth:  $\chi^2$  [201] = 807.91;  $\chi^2/df$  = 4.01; CFI = 0.99; RMSEA = 0.06). In multi-group analyses on male late adolescents, findings indicated no differences between the two models ( $\Delta\chi^2$  [5] = 9.88, p = .08;  $\Delta$ CFI = 0.000;  $\Delta$ RMSEA = 0.000).

Analyses on female late adolescents indicated some differences between the two models based on the  $\chi^2$  difference test ( $\Delta\chi^2$  [5] = 36.39, p < 0.001), although alternative measures of fit indices indicated few differences in model fit ( $\Delta$ CFI = 0.001;  $\Delta$ RMSEA = 0.000). Together, these findings provided evidence of general similarity in the self-control construct for Japanese and U.S. male, and to some extent, female late adolescents.

## 4.4. Regression Analyses

In the next step, multiple regression analyses were used to determine the predictive utility of low self-control for the different deviance measures. Again, because of the positive skew of the deviance measures, log transformations of each deviance measure were computed and subsequently used in the regression analyses. Regressions were completed separately by sex; control variables (age and SES) were entered on an initial step. Table III includes the results of these analyses.

With few exceptions, low self-control significantly predicted the different types of deviance. Findings were also largely similar by sex. Low self-control predicted the following amounts of variance in deviance measures, males and females: (1) vandalism: 4.9%, 7.0%; (2) drug use: 12.9%, 3.6%; (3) school misconduct: 10.2%, 3.9%; (4) general deviance: 10.1%, 5.0%; (5) theft: 8.2%, ns; (6) assault: ns, 3.6%; and (7) total deviance: 9.9%, 7.9%. Low self-control did not account for significant variance above and beyond control variables for male alcohol use and assault, and for female theft. In addition, contrary to expectations, low self-control was negatively associated with female alcohol use, where it explained 5% of the variance. Follow-up z-tests of the observed differences in the importance of low self-control for theft and assault between Japanese males (b = 0.077, SE = 0.025 and b = 0.058, SE = 0.034) and females (b = 0.026, SE = 0.014 and b = 0.040, SE = 0.014) indicated no differences between the partial regression coefficients by sex (z = 1.78 and z = 0.05, respectively). Similarly, no statistically significant difference was found for the partial regression coefficients for male and female alcohol use (b = -.019, SE = 0.034 and b = -.102, SE = 0.03; z = 1.83).

## 4.5. Cross-National Comparative Analyses

In a final step, in order to determine whether the relationships between low self-control and deviance measures were similar or different in comparison to previous studies on mostly North American samples,

**Table III.** Multiple Regressions of Low Self-Control Predicting Deviance by Sex (Japanese Sample)

|                   |                  | Ma           | ales $(n = 11)$ | 0)    | Females $(n = 225)$ |          |       |  |
|-------------------|------------------|--------------|-----------------|-------|---------------------|----------|-------|--|
|                   |                  | $\Delta R^2$ | b               | SE    | $\Delta R^2$        | В        | SE    |  |
| Vandalism         | Age              | 0.001        | -0.003          | 0.012 | 0.020               | -0.009   | 0.005 |  |
|                   | SES              | 0.018        | 0.012           | 0.009 | 0.006               | 0.006    | 0.004 |  |
|                   | Low self-control | 0.049        | 0.065*          | 0.028 | 0.070               | 0.055*** | 0.013 |  |
|                   | Total $R^2$      | 0.069        |                 |       | 0.096               |          |       |  |
| Alcohol Use       | Age              | 0.069        | 0.040**         | 0.015 | 0.010               | 0.013    | 0.011 |  |
|                   | SES              | 0.012        | 0.012           | 0.010 | 0.006               | 0.009    | 0.009 |  |
|                   | Low self-control | 0.003        | -0.019          | 0.034 | 0.050               | -0.102** | 0.030 |  |
|                   | Total $R^2$      | 0.083        |                 |       | 0.066               |          |       |  |
| Drug Use          | Age              | 0.009        | 0.012           | 0.009 | 0.000               | 0.001    | 0.003 |  |
| C                 | SES              | 0.007        | 0.005           | 0.006 | 0.001               | 0.002    | 0.002 |  |
|                   | Low Self-Control | 0.129        | 0.078***        | 0.020 | 0.036               | 0.022**  | 0.008 |  |
|                   | Total $R^2$      | 0.145        |                 |       | 0.038               |          |       |  |
| School            | Age              | 0.003        | -0.003          | 0.013 | 0.009               | 0.013    | 0.008 |  |
| Misconduct        | C                |              |                 |       |                     |          |       |  |
|                   | SES              | 0.002        | 0.004           | 0.009 | 0.000               | -0.001   | 0.006 |  |
|                   | Low self-control | 0.102        | 0.105**         | 0.031 | 0.039               | 0.062**  | 0.021 |  |
|                   | Total $R^2$      | 0.107        |                 |       | 0.048               |          |       |  |
| General           | Age              | 0.001        | 0.007           | 0.012 | 0.002               | -0.002   | 0.005 |  |
| Deviance          | C                |              |                 |       |                     |          |       |  |
|                   | SES              | 0.002        | 0.003           | 0.008 | 0.002               | 0.004    | 0.004 |  |
|                   | Low self-control | 0.101        | 0.091**         | 0.027 | 0.050               | 0.047**  | 0.014 |  |
|                   | Total $R^2$      | 0.104        |                 |       | 0.055               |          |       |  |
| Theft             | Age              | 0.000        | 0.002           | 0.011 | 0.000               | 0.000    | 0.005 |  |
|                   | SES              | 0.034        | 0.014           | 0.008 | 0.010               | 0.007    | 0.004 |  |
|                   | Low Self-Control | 0.082        | 0.077**         | 0.023 | 0.016               | 0.026    | 0.014 |  |
|                   | Total $R^2$      | 0.116        |                 |       | 0.026               |          |       |  |
| Assault           | Age              | 0.013        | 0.019           | 0.015 | 0.000               | 0.002    | 0.005 |  |
|                   | SES              | 0.020        | 0.015           | 0.010 | 0.001               | 0.003    | 0.004 |  |
|                   | Low self-control | 0.027        | 0.058           | 0.034 | 0.036               | 0.040**  | 0.014 |  |
|                   | Total $R^2$      | 0.059        |                 |       | 0.037               |          |       |  |
| Total<br>Deviance | Age              | 0.005        | -0.004          | 0.009 | 0.002               | -0.001   | 0.005 |  |
| Deviance          | SES              | 0.004        | 0.004           | 0.006 | 0.000               | 0.001    | 0.004 |  |
|                   | Low self-control | 0.004        | 0.004           | 0.000 | 0.079               | 0.001    |       |  |
|                   | Total $R^2$      | 0.099        | 0.070           | 0.021 | 0.079               | 0.055    | 0.012 |  |
|                   | I Otal A         | 0.100        |                 |       | 0.001               |          |       |  |

p < .05, p < .01, p < .001.

a series of comparisons were completed; more specifically, partial unstandardized regression coefficients were compared by country, controlling for age, sex, and SES. Total samples were used due to the size constraints of the Japanese sample. Again, we used log transformations for the dependent variables in both samples. Initially, partial regression coefficients were computed for each deviance scale as well as the total

|                      | Japan (N = 335)                   |        |        |       | United States ( $N = 1,189$ )     |       |       |       |          |  |
|----------------------|-----------------------------------|--------|--------|-------|-----------------------------------|-------|-------|-------|----------|--|
|                      | Low self-<br>control $\Delta R^2$ | b      | В      | SE    | Low self-<br>control $\Delta R^2$ | b     | В     | SE    | Z scores |  |
| Vandalism            | 0.052                             | 0.059  | 0.239  | 0.013 | 0.049                             | 0.048 | 0.229 | 0.005 | 0.79     |  |
| Alcohol Use          | 0.026                             | -0.069 | -0.168 | 0.023 | 0.024                             | 0.049 | 0.161 | 0.009 | -4.78*   |  |
| Drug Use             | 0.068                             | 0.044  | 0.273  | 0.009 | 0.028                             | 0.053 | 0.174 | 0.009 | -0.71    |  |
| School<br>Misconduct | 0.059                             | 0.079  | 0.253  | 0.017 | 0.033                             | 0.044 | 0.187 | 0.007 | 1.90     |  |
| General<br>Deviance  | 0.064                             | 0.064  | 0.265  | 0.013 | 0.052                             | 0.048 | 0.234 | 0.006 | 1.11     |  |
| Theft                | 0.038                             | 0.047  | 0.205  | 0.013 | 0.041                             | 0.040 | 0.210 | 0.005 | 0.05     |  |
| Assault              | 0.022                             | 0.048  | 0.156  | 0.015 | 0.036                             | 0.039 | 0.196 | 0.005 | 0.06     |  |
| Total<br>Deviance    | 0.075                             | 0.060  | 0.285  | 0.011 | 0.056                             | 0.047 | 0.245 | 0.005 | 1.08     |  |

Table IV. Comparisons of Unstandardized Partial Regression Coefficients by Country

deviance measure. Next, z scores were computed for each log transformed deviance measure. Table IV presents the results of these comparisons. Only one statistically significant difference was found between Japanese and American late adolescents, namely alcohol use.

# 5. DISCUSSION

The current investigation attempted to examine the generalizability of the General Theory of Crime in a low crime national context, namely Japan—one that differs in local mores, values, and practices from all previous study locations that have empirically tested the theory (Pratt and Cullen, 2000; Vazsonyi et al., 2001). The current study provides evidence that supports this basic proposition by the General Theory, namely that the (slightly revised) Grasmick et al. low self-control measure was a valid and reliable indicator of low self-control in Japanese late adolescents. In addition, based on a series of nested models, the data provided evidence that the low self-control construct was best represented as a multi-dimensional construct, one which includes a number of distinct elements as theoretically proposed by the General Theory (Gottfredson and Hirschi, 1990). This is consistent with other empirical work that found evidence of multidimensionality (e.g., Arneklev et al., 1999; Longshore et al., 1996; Romero et al., 2003; Vazsonyi et al., 2001). Furthermore, this evidence was found in both male and female samples, with no apparent differences. In addition, followup multi-group analyses of a second order latent self-control construct

<sup>\*</sup>All partial regression coefficients are statistically at p < 0.01.

(Arneklev et al., 1999) between Japanese and U.S. late adolescents provided evidence of great similarity across the two groups, especially for males. Although we found some indication that the female comparison provided a poorer fit than the solution based on male participants, it seems that the practical significance of the statistically significant  $\chi^2$  is limited. In other words, because the alternative fit indices indicated extremely small differences between the two groups of females, we can conclude that this provides evidence of similarity.

Together with conceptual and psychometric measurement work completed in Canada, Hungary, the Netherlands, Spain, Switzerland, and the United States, this evidence further validates the conceptualization of self-control by Gottfredson and Hirschi as one that seems very similar across different "places," and it validates the Grasmick *et al.* low self-control measure. This finding is also the very essence of the General Theory, which proposes that a generalizable theory must include constructs that are not bound to one particular cultural context; in turn, this allows rigorous confirmation or disconfirmation across cultural and national boundaries.

The findings also suggested that the low self-control-deviance relationship was not different in the two samples of late adolescents from Japan and the United States. Although initial evidence of the amount of variance explained by low self-control in a variety of deviance measures indicated some differences in explanatory power, more conservative follow-up tests of these relationships provided consistent evidence that it did not differ by country. This was found across a variety of measures ranging from more trivial deviant conduct, such as school misbehavior, to more serious norm-violations, such as theft or assault (generality and versatility). The one exception which provided evidence of cross-national differences in the low self-control-deviance relationship was found for alcohol use.

In fact, contrary to expectations, low self-control was negatively related to alcohol use in this sample of Japanese late adolescents. In separate analyses by sex, findings indicated that low self-control was not significantly related to alcohol use in Japanese males and that it was negatively associated with alcohol use in Japanese females, though, as previously reported, follow-up analyses indicated no differences in the importance of low self-control for alcohol use by sex. This finding is inconsistent with past studies on diverse samples which have found evidence of a positive relationship between low self-control and alcohol use based on identical measures (e.g., Vazsonyi *et al.*, 2001); however, it is also important to point out that these samples were younger. Inspection of levels of alcohol use by Japanese late adolescents in comparison to previous work indicates similar levels of

consumption; in addition, when compared to the American college student sample used in the current study, rates of alcohol use among Japanese late adolescents was lower.

Although a "puzzling" finding at first, cultural differences in the perception of alcohol use are most likely candidates for the observed differences in the relationships between low self-control and alcohol use. In Japan, alcohol consumption, even prior to the age of 20, is not considered an imprudent or risky act, and therefore, we would expect that this behavior might not be positively associated with low self-control. In fact, based on both anecdotal information and conversations with residents in Japan, the evidence suggests that alcohol consumption is very customary, perhaps even socially encouraged, prior to the age of 20. Some of the evidence indicates that (1) alcohol can be purchased in public places in vending machines; (2) drinking rice wine in the home together with parents is very common, as early as during early adolescence; and finally, perhaps most importantly, (3) not drinking at a company party or other social gathering is considered rude and "asocial." In fact, customs dictate that drinking, and sometimes drinking too much, are viewed as simply being a good member of the group.

Of course these values are very different from Western ideals regarding alcohol use and drinking, especially American ones. The initial conclusion might be that the General Theory cannot explain alcohol use in Japan, and thus, falls short of cross-national generalization. However, this finding requires more nuanced discussion. Consider the following comment about alcohol and tobacco use by Hirschi and Gottfredson (1994):

Thus, for example, tobacco and alcohol use have natural consequences that to some degree limit their use, but variation in alcohol and tobacco use may also be traced to restrictions on availability and to differences in social and legal sanctions from one group to another. These differences do not negate the conclusion that tobacco and alcohol fall within the purview of theory; indeed they show that tobacco and alcohol are in the same class as currently illegal substances as marijuana and cocaine (p. 10).

Thus, according to the General Theory, we might expect differences in the relationships between self-control and alcohol use in a comparison between Japan and the United States. This is so because alcohol use, perhaps even excessive use, is accepted in Japan, whereas in the United States, this behavior is generally not tolerated, and in some instances, such as driving while intoxicated, severely punished. These findings emphasize the importance of interpreting self-control as a probabilistic construct useful in the explanation of crime, not in a vacuum, not by itself, but together with

other *mechanisms of restraint* (or lack thereof). It will certainly be important to further examine the relationship between self-control and alcohol use in Japanese youth and adults.

In conclusion, the data from the current investigation provide additional support for the General Theory of Crime based on this Japanese sample of late adolescents. The findings suggest that in this test of a dramatically different society, one characterized by comparatively lower levels of official reports of crime, the basic theoretical prediction about the low self-control-deviance relationship appears to be generalizable and invariant. At the same time, they also suggest little support for a cultural difference framework, with the potential exception of alcohol use. In its extreme form, a cultural deviance framework would have predicted differences in the relationships between etiological variables, such as low self-control or other mechanisms of formal and informal social control (e.g., Komiya, 1999), and measures of deviance.

These findings also need to be considered in the context of the study's limitations. First, the sample was not broadly representative of Japanese late adolescents, and therefore, the findings and observed relationships should not be generalized beyond this sample. It will be important to replicate the current study, both in different locales in Japan, as well as with different age groups that will include individuals who do not continue their education at the post-secondary level. Second, contrary to recent longitudinal work completed on American samples (e.g., Turner and Piquero, 2002), the current study was limited to a cross-sectional assessment of the low self-controldeviance relationship. Third, the current data were based exclusively on attitudinal self-report measures; despite the fact that it has been the most frequently used assessment method in this area, additional work needs to be completed employing behavioral measures of low self-control as suggested by Gottfredson and Hirschi (1990).

Finally, whereas the current study tested predictions by the General Theory on the low self-control-deviance relationship across two very different cultures and found a very high degree of similarity in it, the findings are unable to provide new insights into the cross-national differences in official crime statistics. At the same time, alternative crime indices, such as victimization data, suggest greater similarity in rates of crime between the United States and Japan than previously assumed (e.g., Cruszczynska, 2002; Hamai and Ellis, 2002). Nevertheless, the prediction model explained a modest amount of variability in crime, in both national contexts. Thus, additional etiological factors, based on the General Theory, should also be considered and tested in future crossnational comparative efforts.

# **APPENDIX A.** The Normative Deviance Scale (NDS)

Have you ever . . . .

#### Vandalism

Smashed bottles on the street, school grounds, or other areas?

Intentionally damaged or destroyed property belonging to your parents or other family members (e.g., brothers or sisters)?

Intentionally damaged or destroyed property belonging to a school, college, or university?

Intentionally damaged or destroyed other property (e.g., signs, windows, mailboxes, parking meter, etc.) that did not belong to you?

Intentionally damaged or destroyed property belonging to your employer or at your workplace?

Slashed or in any way damaged seats on a bus, in a movie theater, or something at another public place?

Written graffiti on a bus, on school walls, on rest room walls, or on anything else in a public place?

Committed acts of vandalism when coming or going to a football game or other sports event?

#### Alcohol use

Consumed hard liquor (e.g., tequila, whiskey, vodka, or gin) before you were 20?

Consumed alcoholic beverages (e.g., beer, wine, or wine coolers) before you were 20?

Got drunk (intentionally) just for the fun of it (at any age)?

Got drunk just to fit in and be part of the crowd (at any age)?

Lied about your age to buy alcohol before you turned 20?

Had an older brother/sister or friend buy alcohol for you?

Bought alcohol for a brother/sister or friend?

## Drug use

Used tobacco products regularly (e.g., cigarettes, chew, snuff, etc.)?

Used "soft" drugs such as marijuana (grass, pot)?

Used "hard" drugs such as crack, cocaine, or heroin?

Gone to school when you were drunk or high on drugs?

Gone to work when you were drunk or high on drugs?

Gone to a concert when you were drunk or high on drugs?

Gone to a club/dance/party when you were drunk or high on drugs?

Gone to a club/dance/party to get drunk or high on drugs?

Sold any drugs such as marijuana (grass, pot), cocaine, or heroin?

School misconduct

Cheated on school tests (e.g., cheat sheet, copy from neighbor, etc.)?

Been sent out of a classroom because of "bad" behavior (e.g., inappropriate behaviors, cheating etc.)?

Been suspended or expelled from school?

Stayed away from school/classes when your parent(s) thought you were there?

Intentionally missed classes over a number of days for "no reason," just for fun (e.g., there was no family emergency)?

Been in trouble at school so that your parents received a phone call about it? Skipped school/work (pretending you are ill)?

#### General deviance

Intentionally disobeyed a stop sign or a red traffic light while driving a vehicle?

Been on someone else's property when you knew you were not supposed to be there?

Failed to return extra change that you knew a cashier gave you by mistake? Tried to deceive a cashier to your advantage (e.g., flash a larger bill and give a smaller one)?

Let the air out of the tires of a car or bike?

Lied about your age to get into a nightclub/bar?

Made nuisance/obscene telephone calls?

Avoided paying for something (e.g., movies, bus or subway rides, food, etc.)?

Used fake money or other things in a candy, coke, or stamp machine?

Shaken/hit a parked car just to turn on the car's alarm?

Stayed out all night without informing your parents about your whereabouts?

## Theft

Stolen, taken, or tried to take something from a family member or relative (e.g., personal items, money, etc.)?

Stolen, taken, or tried to take something worth 1200 Yen or less (e.g., newspaper, pack of gum, mail, money, etc.)?

Stolen, taken, or tried to take something worth between 1200 to 12,000 Yen (e.g., shirt, watch, cologne, video game cartridge, shoes, money)?

Stolen, taken, or tried to take something worth more than 12,000 Yen (e.g., leather jacket, car stereo, bike, money, etc.)?

Stolen, taken, or tried to take something that belonged to "the public" (e.g., street signs, construction signs, etc.)?

Stolen or tried to steal a motor vehicle (e.g., car or motorcycle)? Bought, sold, or held stolen goods or tried to do any of these things?

#### Assault

Hit or threatened to hit a person?

Hit or threatened to hit your parent(s)?

Hit or threatened to hit other students/peers or people?

Used force or threatened to beat someone up if they didn't give you money or something else you wanted?

Been involved in gang fights or other gang activities?

Beaten someone up so badly they required medical attention?

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