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Abstract

Gottfredson and Hirschi's General Theory of Crime has been widely tested. Yet, one of their key hypotheses—the stability of self-control hypothesis—has received little attention from researchers, and no known study has examined the applicability of the stability hypothesis in a non-western context. Given Gottfredson and Hirschi's claim that their low self-control theory transcends cultural and national boundaries, we tested the hypothesis with a nationally representative sample of South Korean adolescents using five year panel data. Consistent with studies conducted in the U.S., our results offer partial support for Gottfredson and Hirschi's stability hypothesis. We also provide comparative interpretations of our findings in the South Korean context.

Key words: self-control, stability, South Korea

Introduction

Gottfredson and Hirschi's (1990) General Theory of Crime has been one of the most widely cited criminological theories in recent decades (Pratt & Cullen, 2000). The theory boldly claims that low self-control is *the* cause of criminal and other deviant behaviors. Self-control is acquired in the early years of life primarily through socialization by parents and other responsible adults (Hirschi & Gottfredson, 2001). When parents care for their children, monitor their behavior for deviance, recognize such behavior when it occurs, and admonish the wrongdoing, high levels of self-control is instilled in the children. When any of these elements of effective socialization is missing, low-self control and deviance ensue. In *A General Theory of Crime*, Gottfredson and Hirschi (1990) further maintain that this theory has universal application, because the mechanism involving low self-control and deviance transcends demographic groupings, and national and cultural boundaries.

The low self-control theory has been vigorously tested with regards to the relationship between self-control and criminal and/or analogous behaviors (Grasmick, Tittle, Bursik, & Arneklev, 1993; Longshore & Turner, 1998; Nagin & Paternoster, 1993; Vazsonyi, Pickerinig, Junger, & Hessing, 2001), the association between familial socialization and self-control (Hay, 2001), and the measurement properties of self-control (Longshore et al., 1996; Perrone, Sullivan, Pratt, & Margaryan, 2004). In a comprehensive meta-analysis of 21 empirical studies, Pratt & Cullen (2000) recently show that low self-control has a mean effect size of .257 across varying operationalizations of self-control and after the inclusion of controls from other prominent criminological theories. Pratt and Cullen (2000, p.952) thus concluded that self-control is "one of the strongest known correlates of crime."

In comparison to this large volume of accumulated research, relatively few researchers have tested another fundamental assumption of the self-control theory—the stability postulate. According to Gottfredson and Hirschi, self-control is established by the age of 8 or 10, and persists at the level attained by then across the life course. Thus far all of the studies that have directly assessed the stability hypothesis (Arneklev, Cochran, & Gainey, 1998; Burt, Simons, & Simons, 2006; Hay & Forrest, 2006; Mitchell & Mackenzie, 2006; Turner & Piquero, 2002) were conducted within the U.S. Although these studies offered some insights about and support for the stability hypothesis, no known study exists addressing the same question outside the U.S. context. This is an unfortunate oversight, because a crucial feature of the General Theory is that it transcends culture. Arguing that a generalizable theory must include constructs that are free of cultural meanings, Gottfredson and Hirschi (1990, p. 175) contend that "cultural variability is not important in the causation of crime, that we should look for constancy rather than variability in the definition of and causation of crime…"

In this article we add to the literature by testing Gottfredson and Hirschi's stability thesis in a South Korean context, an East Asian country with a dramatically different culture and history from the United States. For instance, East Asians, and particularly South Koreans, are well-known for their high collectivism, conformity to norms, and self-control due to the cultural heritage of Confucianism as compared to their Western counterparts (Kim, Atkinson, & Yang, 1999; Lee & Larson, 2000). Due to the Confucian emphasis on filial piety and familism (Yun, 2008), it can be said that South Korean parents put relatively greater efforts than Western parents in monitoring children's behavior and disciplining their misbehavior, thereby instilling a higher degree of self-control. Testing the stability postulate in an East Asian context therefore enables us to test the generality of the key postulate of the low self-control theory.

The Stability Postulate

Based on Gottfredson and Hirschi's (1990) stability hypothesis, many criminologists appear to interpret that the level of individual self-control as absolutely unchangeable and fixed across time. Yet, a close reading of the theory indicates that while Gottfredson and Hirschi acknowledge the general persistence in the level of self-control, they also open up a window where self-control may change across time. For instance, they write: …the fact that *socialization continues to occur throughout life* produces the conclusion that the proportion of the population in the potential offender pool should tend to decline as cohorts age (italics in the original; 1990, p. 107). They further note, "The low self-control group continues over time to exhibit low self-control. *Its size, however, declines*" (p. 108; emphasis added).

To be more specific, according to Gottfredson and Hirschi (1990, p. 105), individuals' level of self-control is primarily determined by socialization by the family. However, it is possible that children who are not socialized sufficiently at home may learn self-control through other socialization institutions, particularly the school. Schools can be effective in instilling self-control because they have several advantages over parents in terms of monitoring their charge's behavior, recognizing misbehavior, as well as punishing wrongdoings (see Turner, Piquero, & Pratt, 2006) . Thus, individuals' overall self-control is thought to increase as they go through the formal educational process. Nonetheless, Gottfredson and Hirschi (1990) hint that such an increase will not be quite feasible in the American context because schools in contemporary America tend to lack support from the very families that have already failed to teach their children self-control.

Gottfredson and Hirschi (1990) strongly endorse the classical assumption of human rationality throughout *A General Theory of Crime*. If they are correct in this assumption, then individuals may continue to develop greater self-control over time to avoid costly consequences of deviant behaviors. In other words, the hedonistic calculus will tend to make people gradually learn to defer gratification as they grow older (see Tittle, Ward, & Grasmick, 2003).

While Gottfredson and Hirschi suggest that the absolute level of self-control may increase with age, they are firm in arguing that relative differences in self-control between individuals remain stable across time. Often referred to as the "relative-ranking hypothesis" (Turner & Piquero, 2002, p. 460), this suggests that differences in self-control between offenders and non-offenders persist during the life course. By the same token, Turner and Piquero conclude that "Gottfredson and Hirschi make clear that self-control differences between individuals are *static* but that self-control within individuals is *dynamic*" (p. 467; emphasis added). Therefore, Gottfredson and Hirschi's contention in relation to the stability postulate can be narrowed down to the following two hypotheses: (1) Within-individuals self-control remains reasonably stable with moderate increase, (2) while the relative rankings of self-control between individuals remain stable over the life course[1].

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[1] A word of caution is necessary here. Although Gottfredson and Hirschi acknowledge the improvement in self-control and concomitant decline in deviance, they do not contend that differences in self-control can explain the ubiquitous age-crime association that is typically depicted in the popular inverted J-curve. That is, everyone experiences the age effect regardless of the levels of self-control, with deviance rising to a peak in late adolescence and declining sharply thereafter throughout life. Therefore, the peak in the age-crime curve in late adolescence cannot be construed as late adolescents possessing the lowest level of self-control. Neither can the sharp decline of deviance following late adolescence be explained by a sharp uptick of self-control.

Empirical Evidence of the Stability Postulate

Concerning hypothesis 1, Arneklev et al's (1998) study of a convenience sample of college students assessed change in self-control at two separate waves approximately 4 months apart and found that self-control stayed quite stable. Specifically, the mean self-control at Time 1 was 71.16, and for Time 2 it was 72.58. Because the mean difference was not statistically significant, they concluded that self-control appeared to be stable.

Consistent with Gottfredson and Hirschi's suggestion, there is some evidence that self control may increase over the life course. Using a cross-sectional survey of 350 respondents ages 18 and over, Tittle, Ward, & Grasmick (2003) found a general tendency for the mean scores of self-control to increase with age. Turner & Piquero (2002) reveal similar findings using a longitudinal data that span over a 13 year period. Both mother-reported behavioral and children's self-reported measures of self-control revealed a continuing increase of self-control during the observed period. Furthermore, in support of Gottfreson and Hirschi's (1990) contention that schools are an important source of socialization, and therefore self-control, Turner et al.'s (2005) study found that school/teacher practices significantly affected self-control of students independent of parental socialization.

While these above studies support the stability hypothesis, some other evidence indicates that self-control is not as stable as Gottfredson and Hirschi suggest and that self-control might even decrease across time in certain contexts. Burt et al.'s (2006) study of a national sample of U.S. children ages 7 to 15 showed that about 16 percent of the children substantial changes in self-control after the age of 10. In a randomized evaluation of the impact of a boot camp on adult offenders' self-control, Mitchell & Mackenzie (2006) found that both experimental and control groups' level of self-control decreased significantly within a six-month period. Upon this rather surprising finding, the researchers provide an *a posteriori* theorization that it is the atmospheric hostility that is rampant in the correctional facility that resulted in the decrease of self-control.

In light of the above studies, it may be premature to come to a conclusion about the veracity of the stability postulate. It seems that study results are in part a function of the type of the sample being studied and in part the length of the time being observed. At the very least, it appears that when changes in self-control are assessed for a longer time period such as 13 years in Turner & Piquero's (2000) study, an increase of self-control is likely to be observed. When the study period is short as in the four-month period of Arneklev et al's (1998) study, self-control appears to be relatively stable, although a decrease is also likely depending on the type of study sample, as in the case of Mitchell & Mackenzie's (2006) incarcerated individuals.

In terms of our second hypothesis, the above-mentioned Turner & Piquero (2002) provide evidence that the relative rankings of self-control remain stable. In their longitudinal study, offenders consistently exhibited lower self-control than non-offenders on both behavioral and attitudinal measures over most of the study period. That is, self-control differences between offenders and non-offenders remained significantly different across six out of seven waves during the 13 year data collection period. However, Hay & Forrest's study of 740 African American children counters Gottfredson and Hirschi's proposition. In this study, between-individual rankings in self-control were assessed over a two-year period by creating quartiles of self-control: Fewer than half of the children in the sample remained in the same quartile at Wave 2 as in Wave 1. Except for these studies, however, no known study has directly tested the relative rankings of self-control between offenders and non-offenders, let alone in a cultural context other than the U.S.

The Current Study

In the current study we test Gottfredson and Hirschi's stability hypothesis with a nationally representative sample of adolescent students in South Korea. The data consist of five waves of data collection, beginning when the sampled students were 8th graders and ending when they reached the 12th grade. In our study, we first examine whether or not the level of self-control among South Korean students remains stable during the five year period. Secondly, we examine whether the relative rankings of self-control between delinquents and non-delinquents remain stable over the five year term.

Given Gottfredson and Hirschi's assertion that self-control theory is culture free, our study can be important in establishing that the stability postulate can be generalized outside the U.S. context. Furthermore, Gottfredson and Hirschi maintain that contemporary American schools encounter difficulties in instilling self-control among students primarily due to the lack of support from families (1990). In comparison, South Korean parents' zeal for their children's education and support for schools are extremely high (Lee & Larson, 2000). The Confucian emphasis on education as a road to social status and self-fulfillment, and concomitant respect for teachers has always been an important cultural element in South Korea throughout generations[2] (Chung, 1991; Han, 1990; Lee & Larson, 2000). If Gottfredson and Hirschi are correct in assuming that American schools have difficulties in teaching self-control because of lack of family support, we would expect to see a noticeable increase in self-control among adolescents in South Korean schools given the high family support for schools and teachers in that country. Further, the use of a nationally representative sample of adolescents is more conducive to generalizable conclusions than previous studies that have used a convenient sample of college students (Arneklev et al., 1998) or convicted offenders (Mitchell & Mackenzie, 2006). Variances in self-control in both college students and convicted offenders are likely to be limited, thereby rendering finding statistically significant differences more difficult: College students tend to have higher self-control and convicted offenders have lower self-control in comparison to the general population.

Methods

Data for this study are derived from the Korean Youth Panel Survey (KYPS), a longitudinal study of a nationally representative sample of South Korean adolescents, which was conducted by the Korea Institute for Youth Development. The KYPS first sampled 3,697 students in their second year in junior high school employing a multi-stage stratified sampling design. In comparison to western studies, the response rate was high: 93.3% (3,449) of the sampled students participated in the first wave. Face-to-face interviews were conducted. Follow-up interviews were also carried out annually for the next four years on the same youths. Attrition rates were relatively low: 86% (2,967) of the originally sampled students completed all five wave interviews.

This relatively low attrition rate bodes well for the current study since Hirschi and Gottfredson (1993) claim that high attrition rates in longitudinal studies bias analyses of self-control. Since there is a general unwillingness of individuals low on self-control to participate in surveys, studies with a high attrition rate tend to restrict the variance in self-control, thereby seriously attenuating correlations (see Hirschi, 1969). Also the KYPS permits a fairly critical test of the stability postulate because it measures individual's self-control employing the same measurement tool over the five year period.

Since the publication of *A General Theory of Crime*, both attitudinal and behavioral measures of self-control have been utilized by researchers. Yet, since behavioral measures of self-control can be subject to tautological challenge, some researchers tend to prefer attitudinal measures (Arneklev et al., 1998; Mitchell & Mackenzie, 2006; Tittle et al., 2003). Also, although diversity exists even among attitudinal measures of self-control, they commonly include the six traits of low self-control identified by Gottfredson and Hirschi—impulsivity, preference for simple tasks, risk taking, preference for physical over mental activities, self-centeredness, and temper. In the current study, we use six items that tap the six traits of low self-control. Using a five-category response set, adolescents were asked to indicate how strongly they agreed or disagreed with statements such as "I abandon a task soon once it becomes hard and laborious to do," "I am apt to enjoy risky activities," and "I lose my temper whenever I get angry." Items were recoded in a way that higher scores were indicative of higher self-control, and then summed to create the Self-Control Scale

The reliability of the Self-Control Scale for each wave was .64, .65, .65, .64, and .65, respectively. Given that our measure consists of only 6 items, the magnitude of the reliability seems to be at the acceptable range (Cronbach, 1951). In addition, these compare favorably with those found in other studies. For instance, Wright et al's (1999) 7-item measure of self-control had a reliability of .64, and Cheung & Cheung's (2008) 10-item scale on youths in Hong Kong had an alpha of .61. To further explore the

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[2] One of the widely taught Confucian precepts in Korea is that human beings must obey and respect the teacher to the same degree as they respect and obey the king and the father.

dimensionality of this scale, factor analyses of the six items for each wave data were conducted. The results of these analyses showed that all the items loaded on only one factor for each wave's data. All of the factor analyses produced one eigenvalue greater than 1.00. The pronounced breaks between the first and second eigenvalues, as revealed in screeplots, clearly indicate the unidemensionality of the self-control scale (Cattell, 1966). The six items measuring each of the dimensions of self-control are listed in Appendix A.

In order to differentiate between offenders and non-offenders, fourteen items measuring a variety of delinquency and state offenses were used. The items are also listed in Appendix A. Students were asked at each wave whether they had been involved in such behaviors for the preceding 12 months (yes=1, no=0). Students reporting any involvement over the five years were categorized as the delinquent group (n=1,063), while those not reporting involvement were categorized as the non-delinquent group (n=1,636). Our final sample consists of slightly more males (51%) than females (see Table 1). The mean age at Wave 1 was 13.79, and that at Wave 5 was 17.78.

Analytical Strategy

482 out of the original 3,449 students who were interviewed at Wave 1 have dropped out at some point along the following four waves of data collection. We further deleted 268 students who missed answering any of the six self-control items. Thus, our final sample consists of 2,699 students. The effect of the attrition of these 750 students who dropped from the final analyses was examined. We computed a dichotomous measure where 1= missing and 0=non-missing, and then performed a series of *t*-tests. The results indicate that those who were excluded from the final analyses were more likely to have engaged in offending (t=3.99, p<.001). They were slightly more likely to be females (t=2.56, p<.05). Yet, there was no significant difference in the level of self-control between the final sample and the attrition subsample (t=.51, p>.05).

We conducted several different analyses to critically assess Gottfredson and Hirschi's hypotheses on the stability of within- and between-individuals' self-control. First, we calculated the mean self-control score for each Wave. Second, following Mitchell & Mackenzie (2006), we computed Spearman's correlation coefficients to examine the relationship between the rank-ordered distribution of self-control scores between the first Wave and the following four Waves. Since Gottfredson and Hirschi hypothesize the stability in the rank-ordered distribution of self-control between individuals, Spearman's rank correlation coefficient is deemed a proper correlational technique than the Pearson correlation coefficient. Finally, we subcategorized the sample into delinquents and non-delinquents, and then examined the difference in self-control between the two groups.

Results

To provide an initial assessment of the general stability of self-control, mean self-control score at each Wave was computed. As shown in Table 1, our respondents reported no appreciable mean differences in self-control; self-control remains surprisingly stable during the five year period. We originally expected to see a general increase of self-control among the South Korean students, given the widespread emphasis on education and respect for teachers in South Korea. Such an expectation, however, was not materialized. Our result is very similar to what Arneklev et al (1998) observed with their sample of college students— with supposedly high self-control—for a four month period. But it is in contrast with Turner & Piquero (2002), who observed an increase in self-control, and with Mitchell & Mackenzie (2006), who reported a decrease in self-control.

Table 1. Descriptive Statistics (N=2,699)

Variable	Mean	S.D.	Range
Age of youth (Wave 1)	13.79	.42	13-16
Age of youth (Wave 5)	17.78	.42	17-19
Sex (1=male)	.51	.5	0-1
Self-control (Wave 1)	2.79	3.79	6-30
Self-control (Wave 2)	2.59	3.77	6-31
Self-control (Wave 3)	2.74	3.72	6-32
Self-control (Wave 4)	2.74	3.64	6-33
Self-control (Wave 5)	2.72	3.65	6-34

Note: Higher values for the self-control scale are indicative of higher self-control.

While Table 1 allows us to see if there has been a change in overall mean scores across time, it does not tell whether there has been an "individual" change in self-control. It is possible that self-control has improved for some, while some others have experienced a decline. In that case, the changes might have cancelled each other out, thereby demonstrating the conspicuous stability observed in Table 1. Spearman's correlations coefficients in Table 2 address some of the problems by showing how similar rank-ordered distributions of scores between individuals are over time.

The correlation matrix in Table 2 displays the bivariate Spearman correlations between the self-control measures at Wave 1 and the self-control measures of the following four waves. If within-individual self-control is indeed stable across time, we expect the correlations between Wave 1 and the ensuing four Waves to be large and statistically significant. Although there is no clear-cult rule, Carmines & Zeller (1979) suggest a coefficient of .80 as the acceptable standard for consistency.

Table 2. Spearman Correlations Between Self-Control Dimensions at Wave 1 and Ensuing Waves (N=2,699)

	Wave 2	Wave 3	Wave 4	Wave 5
Impulsivity	.45	.39	.33	.30
Simple tasks	.42	.38	.34	.34
Risk taking	.45	.40	.38	.35
Physicality	.35	.32	.33	.32
Self-centered	.41	.39	.35	.39
Temper	.45	.38	.35	.34
Total self-control	.53	.47	.42	.42

Note: All correlations are statistically significant at the .05 level.

However, our analyses show that the values of the coefficients in Table 2 apparently fall short to such a standard: None of the coefficients is higher than .53. Further, the magnitudes of the coefficients continue to decrease as respondents age. These indicate that within-individual self-control is not stable in absolute terms. Nor are the magnitudes of correlations nearly as large as Gottfredson and Hirschi had expected. Nonetheless, this finding does not invalidate their hypothesis of the rank-ordered stability of self control. Rather, the correlations indicate that self-control at Wave 1 is only moderately related to self-controls in the following years. Note that all the coefficients in Table 2 are significant at the .05 level. Also, consistent with Arneklev et al's (1998) finding, correlations of each dimension of self-control are smaller than those for the overall construct of self-control.

Given the moderate correlations among self-controls between Wave 1 and the following Waves, we further investigated whether the self-control of non-delinquents is significantly different from that of delinquents. If Gottfredson and Hirschi's hypothesis is applicable in the South Korean context, then non-delinquents' self-control would be significantly higher than delinquents' self-control and the difference should be maintained across time in our sample. Table 3 reports the differences between the two groups and related *t*-test results.

Table 3. Group Mean Comparisons of Self-Control between Delinquents and Non-delinquents

Wave	Non-delinquents (n=1636)	Delinquents (n=1063)	*t* value
	Mean	Mean	
Wave 1	21.61	19.51	14.60***
Wave 2	21.26	19.54	11.85***
Wave 3	21.48	19.59	13.30***
Wave 4	21.37	19.77	11.48**
Wave 5	21.41	19.66	12.50***

*** $p<.001$

Consistent with Gottfredson and Hirschi, the mean differences of self-control between delinquents and non-delinquents are apparent across each of the five Waves of data. Specifically, about a 2 point difference on our self-control measure is maintained throughout the five year study period and all the differences are statistically significant at least at the .01 level. Also, note that neither of the delinquents and non-delinquents group improves their level of self-control over time. This confirms the result in Table 1, which suggest that South Korean students in junior high and high schools do not improve self-control via school socialization experiences. Our findings are at odds with Turner & Piquero's(2002) study results with American youths: They found that both offenders and non-offenders increased their levels of self-control over a 13 year period, and the rate at which offenders gained self-control was quicker that the rate for non-offenders.

Thus far, our analyses evidence a partial support for the stability postulate of the low self-control theory. First, self-control remained stable during adolescence among South Korean students. In other words, self-control did not improve during the five year school socialization period. Second, delinquents and non-delinquents invariably ranked differently, with non-delinquents exhibiting higher levels of self-control across five years.

As a final phase of analysis, we follow Turner & Piquero (2002), and examine the stability of self-control *within* delinquents and non-delinquent groups. To investigate Hirschi & Gottfredson's contention (2000, p. 58) that differences within offender/nonoffender groupings should remain constant over time, Turner & Piquero (2002) isolated the individuals in the lowest quartile on self-control in both offender and non-offender groups and examined the change of self-control within each group.

Table 4. Mean Comparisons of Self-Control between Upper 75 Percentile and Lower 25 Percentile by Offender Grouping

	Delinquents (n=1063)			Non-delinquents (n=1636)		
	Higher 75 percent (n=774)	Lower 25 percent (n=289)		Higher 75 percent (n=1195)	Lower 25 percent (n=441)	
	Mean	Mean	*t*	Mean	Mean	*t*
Wave 1	21.28	14.77	37.42***	23.21	17.27	45.64***
Wave 2	20.44	17.16	13.74***	22.09	19.02	16.43***
Wave 3	20.24	17.87	9.47***	22.18	19.61	14.01***
Wave 4	20.32	18.31	8.03***	22.02	19.61	13.30***
Wave 5	20.29	17.97	9.48***	22.03	19.73	12.48***

We present the results in Table 4. The findings are more dynamic than the results of previous analyses. First of all, the rank orders in self-control between delinquents and non-delinquents are consistently maintained. The self-control of those in higher three quartiles in the non-delinquent group is consistently higher than the figure for their delinquent group counterparts. Likewise, the self-control of those in the lowest quartile in the non-delinquent group is invariantly higher than that for the lowest quartile in the delinquent group. Supporting Hirschi & Gottfredson's contention (2000), the rank ordered self-control within delinquent and non-delinquent group also appears to be reasonably stable. All of the mean differences between high self-control subgroup and low self-control subgroup within both delinquent and non-delinquent groups are statistically significant at the .001 level across the five Waves.

Nonetheless, it is noteworthy that there are notable increases in self-control among those in the lowest quartile in both delinquent and non-delinquent groups over time. Specifically, the mean self-control for Wave 5 data is 3.20 higher than that for Wave 1 in the delinquent group. For the non-delinquent group, the mean difference between the two Waves is 2.46. In other words, those who have the lowest level of self-control did increase self-control, and the increase was more conspicuous for the delinquent group than the non-delinquent group. However, such an increase in self-control did not accompany those with higher self-control. We are not certain at this moment whether the observed increase of self-control among those with the lowest level of self-control was mainly due to school socialization or continuing parental socialization, or a combination of both. At the minimum, this finding with South Korean adolescents is in line with the Turner and Piquero's (2002) results with American youths. They also found that offenders gained self-control at a higher rate than the rate for non-offenders. Yet, the difference is that American youths in Turner and Piquero's study exhibited an overall increase of self-control regardless of their level of self-control. Among South Korean adolescents, such an increase was observed only with those in the lowest quartile on the self-control measure.

Discussion

Drawing on prior studies conducted in the U.S., we tested the stability of self-control hypothesis with a national probability sample of South Korean youths. Gottfredson and Hirschi maintain that while self-control differences between individuals are stable, self-control within individuals can be dynamic, with the possibility of its increase occurring primarily through school socialization.

In support of the proposition that difference in self-control between individuals are stable, our study showed that non-delinquents' self-control was significantly higher than delinquents' self-control across five waves of data collection. When we subcategorized both delinquent and non-delinquent youths into the lowest quartile and higher three quartiles, the rank orders in self-control between delinquents and non-

delinquents also remained stable. This study's finding is important because it confers evidence that Gottfredson and Hirschi's stability postulate can be applicable not only in Western contexts, but it can also be applied to Eastern societies. This provides some support to Gottfredson and Hirschi's argument that the general theory of crime is free of cultural meanings and transcends national boundaries.

With regard to their hypothesis on within individual self-control, Gottfredson and Hirschi (1990) acknowledged the possibility that self-control may increase through school socialization above and beyond familial socialization. Yet they dismissed such a prospect in the U.S. citing the low level of parental support for schools. They argued that the lack of support for school is more pronounced among the parents who have failed to instill self-control in their children from the outset. That said, prior studies in the Western context suggested that a short period of observation (Arneklev et al 1998) would reveal stability of self-control, while a longer observation (Turner & Piquero, 2002) would reveal a steady increase.
Using an observation period of five years, our initial analysis showed that the level of self-control remained quite stable among the South Korean school-aged adolescents. Originally we expected to uncover an overall rise in self-control, given the prevalent Confucian precepts in South Korea that emphasize education and respect for teachers. But an initial examination of overall mean scores of self-control over the five year period did not exhibit such an increase. Moreover, our correlational analysis which partially taps within-individual stability of self-control showed that self-control was not as stable as Gottfredson and Hirschi would have expected. Spearman's correlation coefficients between Waves were only moderate, and the magnitudes of the coefficients decreased as the time gap between Wave 1 and the comparison Wave increased.

Further detailed analyses revealed an increase of self-control among those in the lowest quartile on the self-control measure in both delinquent and non-delinquent groups, while such increase was not evident in the higher quartiles. At present, we are not certain why self-control increased only among low self-controlled Korean youths, while it increased among both low and high self-controlled American youths in Turner & Piquero's (2002) study. One potential explanation is that those in the lowest quartile have the most room to improve as compared to those in higher quartiles who have little amounts to improve in self-control. At any rate, it appears that school socialization might have played a role in instilling self-control in the Western as well as Eastern context. By extension, Gottfredson and Hirschi might have been incorrect in that they largely discounted the role of socialization via school as an avenue to infuse self-control. One can further argue that their contention that an individual's self-control, once formed via parental socialization, becomes relatively stable throughout the remainder of life was somewhat overstated.

With regard to policy implications of the low self-control theory, Gottfredson and Hirschi emphasize policies that would strengthen the family and improve parental child-rearing practices. All other policies, according to them, are doomed to fail (1990). Our study supports previous studies suggesting that schools also can play an effective role in curbing delinquency and crime. Insofar as low self-control causes crime and delinquency, policies that place all the crime prevention eggs in the parental child rearing basket while ignoring schools are remiss. Schools can teach foundational skills such as delaying gratification, the ability to share, and the management of feelings; lessons in self-control and empathy are no less important than literacy or numeracy. Our study suggests that such practices help South Korean youths who failed to develop sufficient self-control at home to improve their self-control.

Our study contributes to the field by testing the stability postulate for the first time outside the American context, but it is not without its limitations. First, we only employed an attitudinal measure of self-control. Considering Hirschi and Gottfredson's (1993) contention that behavioral measures of self-control better reflect an individual's level of self-control, behavioral measures might have produced a different pattern of self-control changes. Second, although we observed changes in self-control over a five year period from around 13 to 17, such a period (although longer than most other studies assessing this issue) may not be long enough to fully test the stability hypothesis. For one thing, our sample is limited to middle and high school students, whose self-control, one might argue, is in a state of flux as compared to older individuals as in other studies. For another, since low self-control theory posits that an individual's level of self-control remains stable after the age of 8 or 10, it also suggests that self-control of children under 8 or 10 does not remain stable. In this regard, longitudinal data that measure self-control from pre-elementary school children and onward can serve as an important tool to test the hypothesis more comprehensively.

Finally, our test was limited to the five year period ranging from 8th through 12th grade. Thus, the findings of this study cannot be extrapolated to the change/stability of self-control to pre-8th graders or post-12th graders. At the minimum, these limitations suggest possible avenues future researchers might need to take.

Appendix A

Self-Control Scale Items

Self-control dimension	Items
Impulsivity	I jump into exciting things even if I have to take an examination tomorrow.
Simple tasks	I abandon a task soon once it becomes hard and laborious to do.
Risk taking	I am apt to enjoy risky activities.
Physical activities	I fight more frequently than others do.
Self-centered[i]	I enjoy teasing and harassing other people
Temper	I lose my temper whenever I get angry.

Delinquency Items

During the past 12 months, have you ever done the following?

1. Running away

2. Having sex

3. Severely beating other people

4. Gang fight

5. Robbing

6. Stealing

7. Sugar-daddy relationship for money

8. Severely teasing or bantering others

9. Threatening other people

10. Bullying others

11. Sexual assault or sexual harassment

12. Smoking

13. Drinking

14. Having unexcused absence

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[i] The appropriateness of using this item as a measure of self-centeredness can be substantiated by Gottfredson and Hirschi's explanation of self-centeredness. They state, "Crimes often result in *pain or discomfort for the victim*. It follows that people with low self-control tend to be self-centered, indifferent, or insensitive to the suffering and needs of others" (italics in the original; 1990, p. 89).

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