Criminal Behaviour and Mental Health
(2018)
Published online in Wiley Online Library
(wileyonlinelibrary.com) DOI: 10.1002/cbm.2065

An examination of the interaction between morality and self-control in offending: A study of differences between girls and boys

ANNA-KARIN IVERT[1], FRIDA ANDERSSON[2], ROBERT SVENSSON[1], LIEVEN J.R. PAUWELS[3] AND MARIE TORSTENSSON LEVANDER[1], [1]Department of Criminology, Faculty of Health and Society, Malmö University, Malmö, Sweden; [2]The Swedish National Council for Crime Prevention, Stockholm, Sweden; [3]Ghent University, Ghent, Belgium

ABSTRACT

Background *There is a well-documented gender difference in offending, with evidence that boys, on average, are more involved in crime than girls. Opinions differ, however, on whether the causes of crime apply to girls and boys similarly.*

Aims *Our aim is to explore crime propensity in boys and girls. Our research questions were (1) are there differences between boys and girls in moral values and self-control; (2) are these attributes similarly correlated with offending among girls and boys; and (3) is any interaction effect between morality and self-control identical for girls and boys.*

Methods *Data were drawn from the Malmö Individual and Neighbourhood Development Study, which includes 481 girls and boys aged 16–17. An 8-item self-control scale was derived from Grasmick's self-control instrument; we created a 16-item morality scale. Analysis of variance was used to test for differences in scale scores.*

Results *There were significant gender differences in moral values but not self-control. Moral values and self-control were significantly correlated with offending among both girls and boys. In the multiple regression analysis, the three-way interaction term used to test the interaction between gender, self-control and moral values was non-significant, indicating that the magnitude of the self-control–moral value interaction is not affected by gender.*

Conclusions *Our findings indicate that effects of morality and self-control are general and apply to girls and boys similarly, so more research is needed to explain gender differences in crime prevalence.* © *2018 The Authors Criminal Behaviour and Mental Health Published by John Wiley & Sons Ltd.*

(2018)
DOI: 10.1002/cbm

Introduction

There has been increasing interest in whether we can assume that the same mechanisms explain male and female offending. A growing number of researchers argue that the underlying causes of crime may not be identical between the sexes and that there is a need to study female criminality in itself in order to develop more gender-specific theories, models and measurements (Fontaine et al., 2009; Blokland and van Os, 2010). On the other hand, a number of studies have shown that common factors can be useful in explaining crime involvement among girls and boys and also why boys commit more crime than girls (e.g. Smith and Paternoster, 1987; Mears et al., 1998; Piquero et al., 2005).

One such general theory is *situational action theory* (SAT), which asserts that the decision to commit a crime is the result of an interaction between propensity and exposure (Wikström et al., 2012). Crime propensity is a key theoretical construct with two main components – ability to exercise self-control and level of morality. Criminogenic exposure is the extent to which the individual is involved in settings with criminogenic features.

The gender gap in crime is well documented, with findings almost consistently showing higher levels of criminal involvement among boys (e.g. Junger-Tas et al., 2004; Svensson and Ring, 2007; Weerman and Hoeve, 2012). According to SAT, the gender gap in crime can be explained by (1) gender differences in crime propensity or (2) gender differences in exposure to criminogenic settings, or both (Weerman et al., 2015; Hirtenlehner and Treiber, 2017). Gender differences in crime could also be a consequence of differences in early development that result in gender differences in propensity and exposure. This would imply that boys more often than girls see and choose crime as an alternative, although do so for the same reasons. Our focus here is exclusively on the first part of this explanation – that there may be gender differences in crime propensity, more precisely moral values and self-control.

Some criminologists have argued that *self-control* is the primary cause of crime (Gottfredson and Hirschi, 1990), others that morality is the key cause (e.g. Hirschi, 1969; Wikström, 2010; Messner, 2012). Numerous studies have found support for the hypothesis that low self-control increases the risk for offending (e.g. Ribeaud and Eisner, 2006; Schoepfer and Piquero, 2006; Antonaccio and Tittle, 2008), as well as for the hypothesis that strong conventional moral values decrease it (e.g. Loeber et al., 1998; Tibbetts, 2003; Stams et al., 2006; Antonaccio and Tittle, 2008). While the associations between self-control and morality and offending are well established, the empirical knowledge is more ambiguous with regard to how these factors may be differentially related to offending among girls and boys, respectively.

The conceptualisation of self-control differs between studies, but it is most commonly operationalised using the Grasmick et al. (1993) 23-item scale, although short versions have often been used. Results from prior studies

DOI: 10.1002/cbm

investigating sex differences in the ability to exercise self-control are inconclusive (Tittle et al., 2003). One study (Steketee et al., 2013), for example, found that there were both sex differences in self-control ratings and that low self-control was a stronger correlate of offending in boys than girls (see also Burton et al., 1998 ; LaGrange and Silverman, 1999), while Weerman et al. (2015) found that there were significant gender differences in levels of self-control, but the effect similar.

As with self-control, conceptualisations and operationalisations of morality have varied between different studies. Researchers often use the term morality to refer to moral values, that is, perceptions about right and wrong (Loeber et al., 1998). Weerman et al. (2015) showed that girls appear to have higher moral values than boys (see also Antonaccio and Tittle, 2008; Weerman and Hoeve, 2012; Svensson, 2015), but, as with self-control, the magnitude of the effect of moral values on delinquency seems to be rather similar for girls and boys (e.g. Weerman and Hoeve, 2012; Weerman et al., 2015).

Why and how self-control and morality interact on offending has been discussed within SAT. According to this theory, individuals vary in whether they have high or low levels of law-relevant *moral values*, and this determines whether or not they see crime as an option (Wikström et al., 2012). Thus offending is assumed to be primarily a question of morality and not of low self-control (Wikström, 2006; Wikström and Treiber, 2007). When an individual does not see crime as an action alternative – that is, has a high moral level – he or she does not need self-control, and the ability to exercise self-control then becomes irrelevant as a cause of crime. Thus it is assumed that there is an *interaction* effect between morality and self-control in the prediction of offending.

A number of studies have explicitly examined whether morality and self-control interact with regard to self-reported offending (e.g. Svensson et al., 2010; Wikström and Svensson, 2010; Pauwels, 2012; Gallupe and Baron, 2014; Bruinsma et al., 2015; Eifler, 2015; Hirtenlehner, 2015; Pauwels, 2015; Hirtenlehner and Kunz, 2016; Pauwels and Svensson, 2017). De Li, 2004 examined whether self-control interacts with different aspects of social bonds, which included interactions with moral beliefs. Pauwels (2012) is the only one of these studies that has examined whether this interaction holds for both girls and boys, finding a significant interaction effect in both girls and boys.

Our aims were to test whether girls and boys differ in crime propensity, more precisely moral values and self-control, and whether there are sex differences in any correlations between self-control and offending or morality and offending and whether there is any gender effect on such correlations.

Our hypotheses were that morality would be a strong correlate of offending, but self-control only relevant in the context of low morality scores and thus that there will be an interaction between morality and self-control in the explanation of individual crime involvement. Finally, we hypothesised that the interaction would be identical for girls and boys.

DOI: 10.1002/cbm

Method

Sample

Data were drawn from the Malmö Individual and Neighbourhood Development Study, which has the overall aim of contributing to a better understanding of the causes and prevention of young people's involvement in crime. This is a longitudinal study of a randomly selected sample of adolescents born in 1995 and living in Malmö, Sweden, on September 1, 2007. The total sample consists of 525 adolescents (approximately 20% of the cohort). The data employed in the current study come from the third wave of data collection, in 2011–2012, and include 481 adolescents (240 girls and 241 boys). Malmö Individual and Neighbourhood Development Study is modelled on the Peterborough Adolescent and Young Adult Development Study, Institute of Criminology, University of Cambridge, UK (Wikström et al., 2012).

Measures

Self-reported offending was measured using a self-report questionnaire with nine offence items: shoplifting, theft from a person, assault, robbery, residential burglary, non-residential burglary, theft from/of a car, vandalism and arson. The item responses were combined into a variety scale by counting the number of offence types an individual had committed over the 12 months prior to interview.

Self-control is measured using an additive scale based on the eight attitudinal items from the Grasmick et al. (1993) self-control scale; it did not include the physical, simple task or self-centred components (see Wikström et al., 2012, for more details). Items thus included 'I never think about what will happen to me in the future'; 'I don't devote much thought and effort to preparing for the future'; 'sometimes I will take a risk just for the fun of it'; 'I sometimes find it exciting to do things that may be dangerous'; 'when I am really angry, other people better stay away from me'; 'I lose my temper pretty easily'; 'I often act on the spur of the moment without stopping to think'; and 'I easily get bored with things', requiring responses along a 4-point scale from strongly disagree, disagree, agree, to strongly agree. High values indicate poor self-control. Cronbach's alpha for this scale in our study was 0.843 (boys 0.845, girls 0.807).

Morality was measured using a scale devised for this study using 16 questions about the adolescents' moral values, as follows: How wrong is it for someone your age to …?

1. steal a pencil from a classmate
2. skip doing homework for school
3. ride a bike through a red light
4. go skateboarding in a place where skateboarding is not allowed
5. hit another young person who makes a rude comment

DOI: 10.1002/cbm

6. lie, disobey or talk back to teachers
7. get drunk with friends on a Friday evening
8. smoke cigarettes
9. skip school without an excuse
10. tease a classmate because of the way he or she dresses
11. smash a street light for fun
12. paint graffiti on a house wall
13. steal a CD from a shop
14. smoke cannabis
15. break into or try to break into a building to steal something
16. use a weapon or force to get money or things from another young person.

Again, rating was on a 4-point scale: very wrong, wrong, a little wrong, and not wrong at all, with high values indicating poor morality. Cronbach's alpha was 0.845 (boys 0.849, girls 0.832).

There were few missing values for either scales, and these were dealt with using Expectation-Maximization (EM) algorithm imputation. Guided by decisions on imputation made by researchers within the Peterborough Adolescent and Young Adult Development Study (Wikström et al., 2012), we only imputed missing items if the answers to no more than two of the items were missing for a given scale (two cases). *Gender* is coded 2 for girls and 1 for boys.

Analytical strategy

The first step in our analysis was to compare prevalence of offending, self-control and moral values between boys and girls. Secondly, we performed analysis of variance to explore gender differences for each of the three variables. As a third step, we explored the correlation coefficients to see whether the correlations between self-control/moral values and offending differed between girls and boys. Finally, a series of multiple regression models were specified to test whether the effect of gender on offending decreases following the inclusion of self-control and moral values and, more importantly, to test the main and interactive effects of self-control, moral values and gender.

We considered using negative binomial regression models, as offending was measured using a variety scale and such models are appropriate for studying the effects of a series of independent variables on a count dependent variable. Many complexities arise, however, when negative binomial models are used to test for interaction effects. It has been argued that the established practice of testing interaction effects by adding product terms to the model equations, which works well in the context of *ordinary least squares* regression, cannot be applied to non-linear models (Ai and Norton, 2003; Hirtenlehner et al., 2014). We therefore decided to rely on linear regression analyses with an untransformed dependent variable. All linear regression models were fitted using SPSS 22. Independent

DOI: 10.1002/cbm

variables were *z*-standardised before computing the multiplicative interaction terms (Aiken and West, 1991). Because of the non-normal distribution of the dependent variable, generalised linear modelling with maximum likelihood estimation was used. The results were also compared with a log-transformed dependent variable that was regressed on the independent variables, their interactions and quadratic terms. The net sizes of all independent variables decreased somewhat because of the log-transformation, but the substantial results remain the same.

Results

Table 1 shows that boys had significantly higher levels of offending by comparison with girls ($t = 5.43$, $p < 0.001$) even if, on average, the number of crime types committed over the past 12 months were low for both girls and boys. Measuring 1 year prevalence of crime involvement shows that almost 50% of the boys self-reported at least one crime during that time compared with almost 30% of the girls. Table 1 also shows that the mean score for moral values was significantly lower for girls (indicating higher values) than for boys ($t = 4.45$, $p < 0.001$). Both girls and boys scored close to the middle of the scale, however, and the observed difference is rather small. There were no gender differences in self-control.

Table 2 shows that both moral values and self-control are significantly correlated with offending among both boys and girls, indicating that adolescents with low self-control/low moral values report higher levels of offending. Correlations

Table 1: Differences in mean scores between girls and boys

	Total sample (N = 481)	Girls (n = 240)	Boys (n = 241)	t-value
Offending (0–8)	0.7 (1.1)	0.4 (0.8)	1.0 (1.3)	5.43***
Moral values (0–48)	22.8 (7.1)	21.3 (6.5)	24.2 (7.4)	4.45***
Self-control (0–24)	10.7 (4.2)	10.3 (4.2)	11.0 (4.2)	n.s.

Note: Mean values and standard deviations are in parentheses. High values on self-control/moral values indicate poor self-control/moral values.
n.s., not significant.
***$p < 0.001$.

Table 2: Correlations between offending and moral values and self-control among girls and boys

	Girls	Boys
Moral values	0.320***	0.362***
Self-control	0.381***	0.385***

***$p < 0.001$.

DOI: 10.1002/cbm

between offending and moral values are somewhat stronger for boys than girls, while correlations between offending and self-control are of similar magnitude for both girls and boys.

Model I in Table 3 shows that girls report lower levels of offending than boys. The second model adds self-control and moral values. This reduces the association between sex and offending, but being a girl is still significantly related to lower levels of offending. Further, model II shows that both moral values and self-control are significantly associated with overall offending. This indicates that adolescents with a low level of self-control are more likely to offend regardless of their level of morality and, similarly, that adolescents with low levels of moral values are more likely to offend regardless of their level of self-control.

In the third model, the interaction terms were introduced. The moral values and self-control interaction term was significantly associated with higher levels of offending, indicating that the effect of self-control is conditioned by the individual's moral values. There was, however, no significant interaction between gender and moral values or between gender and self-control. The three-way interaction between gender, moral values and self-control was also found to be non-significant. This indicates that there is an interaction between the ability to exercise self-control and moral values, in the way predicted by SAT, and that the magnitude of this interaction is not affected by gender. Because the three-way interaction between gender, moral values and self-control almost reached significance ($p = 0.078$), however, we also performed separate regression analysis to examine the moral values and self-control interaction by gender. This analysis showed that the interaction is more pronounced among boys (see Figure 1a-1c for the interaction between self-control and morality for the total sample, and girls and boys separately). Collinearity diagnostics were performed, producing variance inflation factor scores ranging between 1.137 and 2.319, i.e., below the critical level of 2.5.

Discussion

Our overarching aim was to test one important aspect of SAT about the role of moral values, self-control and their interaction. As in all other studies, we found that girls were less likely to offend than boys. Low levels of self-control have been suggested to be one of the primary causes of crime involvement (Gottfredson and Hirschi, 1990), but we found no difference between girls and boys in their self-reported self-control. Furthermore, correlations between self-control and crime involvement were similar by gender. This indicates that, while self-control may be an important factor in explaining individual crime involvement, it cannot explain differences in crime involvement between girls and boys.

Moral values, by contrast, did appear to be more strongly related to offending in girls than boys. This is in line with other findings (e.g. Antonaccio and Tittle, 2008; Weerman and Hoeve, 2012; Svensson, 2015; Weerman et al., 2015).

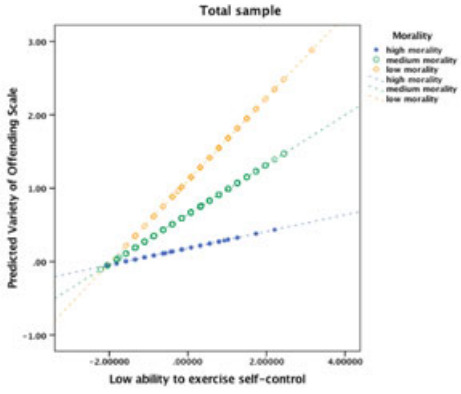
DOI: 10.1002/cbm

Table 3: Linear regression predicting offending

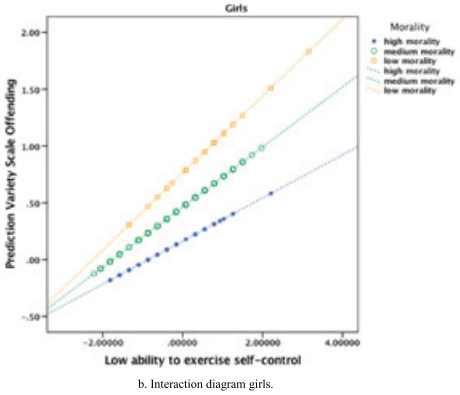
	Model I		Model II		Model III	
	B (SE)	Sig.	B (SE)	Sig.	B (SE)	Sig.
Parameter						
(Intercept)	1.488 (0.1539)	0.000	1.255 (0.1416)	0.000	1.145 (0.1435)	0.000
Gender	−0.529 (0.0974)	0.000	−0.383 (0.0895)	0.000	−0.341 (0.0904)	0.000
Moral values			0.419 (0.0799)	0.000	0.673 (0.2490)	0.007
Self-control			0.338 (0.0457)	0.000	0.498 (0.1433)	0.001
Moral values * Self-control					0.587 (0.2304)	0.011
Gender * Moral values					−0.187 (0.1576)	0.237
Gender * Self-control					−0.117 (0.0904)	0.195
Gender * Moral values * Self-control					−0.256 (0.1455)	0.078

Note: Parameter estimates (generalised linear modelling).

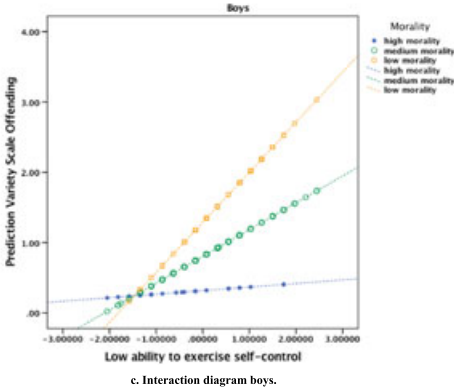
DOI: 10.1002/cbm



a. Interaction diagram total sample.



b. Interaction diagram girls.



c. Interaction diagram boys.

Figure 1: (a) Interaction diagram total sample. (b) Interaction diagram girls. (c) Interaction diagram boys [Colour figure can be viewed at wileyonlinelibrary.com]

Higher moral attitudes among girls have previously been put forward as an important explanation for why girls commit less crime than boys (Wikström and Butterworth, 2006). We found that moral values did explain the observed gender differences in crime involvement in our sample to some extent, although the observed differences in moral values could not fully explain the observed difference in offending. This may only follow from the fact that, although statistically significant, the difference in moral ratings was rather small.

Our study also confirmed an interaction between moral values and self-control in relation to adolescent crime involvement. This corroborates a key proposition of SAT, as well as findings from previous studies, that self-control is particularly important for individuals with low moral values, but the three-way interaction term used to test the interaction between gender, self-control and moral values turned out to be non-significant, indicating that the magnitude of the self-control–moral value interaction is not affected by gender. This is in line with the study by Pauwels (2012), which found that the interaction between self-control and moral values was similar for girls and boys.

DOI: 10.1002/cbm

As with all studies, ours had some limitations. Its cross-sectional nature means that we cannot infer causality. Offending refers to the preceding year, while morality and self-control measures referred to the time of the data collection. There is, however, little reason to believe that this has any significant impact on the findings (see Wikström et al., 2012, for an extended discussion). Another consideration is the rather low number of female offenders in our sample. The finding that interaction between self-control and moral values was more pronounced among boys might be a consequence of this. Similarly, the finding that the three-way interaction term was non-significant should be interpreted with caution. Further studies investigating the effects of morality and self-control on girls' and boys' offending are needed. Finally, we tested only part of the SAT, so this study should now be followed by investigation of how propensity together with exposure can explain sex difference in offending rates. One relevant study, examining gender differences in shoplifting, found that the propensity–exposure interaction applies to both girls and boys and that differences in self-control and exposure, and their interaction, explains the gender gap in shoplifting (Hirtenlehner and Treiber, 2017).

Conclusions

Our findings support the hypothesis that the effects of morality and self-control are general and apply to girls and boys similarly. These variables cannot fully explain the observed gender differences in offending. More research is needed to understand girls' and boys' involvement in crime.

Acknowledgement

This work was supported by the *Swedish Research Council* (Grant No. 2012-05545/HS24-09/1055).

References

Ai C, Norton EC (2003) Interaction terms in logit and probit models. *Economics Letters* **80**: 123–129. https://doi.org/10.1016/S0165-1765(03)00032-6

Aiken LS, West SG (1991) Multiple Regression: Testing and Interpreting Interactions. Newbury Park: Sage Publications.

Antonaccio O, Tittle CR (2008) Morality, self-control, and crime. *Criminology* **46**: 479–510. https://doi.org/10.1111/j.1745-9125.2008.00116.x

Blokland A, van Os R (2010) Life span offending trajectories of convicted Dutch women. *International Criminal Justice Review* **20**: 169–187. https://doi.org/10.1177/1057567710368938

Bruinsma GJN, Pauwels LJR, Weerman FM, Bernasco W (2015) Situational action theory: Cross-sectional and cross-lagged tests of its core propositions. *Canadian Journal of Criminology and Criminal Justice* **57**: 363–398. https://doi.org/10.3138/cjccj.2013.E24

Burton VS, Cullen FT, Evans TD, Alarid LF, Dunaway RG (1998) Gender, self-control, and crime. *Journal of Research in Crime and Delinquency* **35**: 123–147.

De Li S (2004) The impacts of self-control and social bonds on juvenile delinquency in a national sample of mid-adolescents. *Deviant Behavior* **25**: 351–373. https://doi.org/10.1080/01639620490441236

Eifler S (2015) Situation und Kontrolle. Eine Anwendung der Situational Action Theory auf Gelegenheiten zur Fundunterschlagung. *Monatsschrift für Kriminologie und Strafrechtsreform* **98**: 227–256.

Fontaine N, Carbonneau R, Vitaro F, Barker ED, Tremblay RE (2009) Research review: A critical review of studies on the developmental trajectories of antisocial behavior in females. *Journal of Child Psychology and Psychiatry* **50**: 363–385. https://doi.org/10.1111/j.1469-7610.2008.01949.x

Gallupe O, Baron S (2014) Morality, self-control, deterrence, and drug use: Street youths and situational action theory. *Crime and Delinquency* **60**: 284–305.

Gottfredson MR, Hirschi T (1990) A General Theory of Crime. Stanford, CA: Stanford University Press.

Grasmick HG, Tittle CR, Bursik RJ, Arneklev BJ (1993) Testing the core empirical implications of Gottfredson and Hirschi's general theory of crime. *Journal of Research in Crime and Delinquency* **30**: 5–29.

Hirschi T (1969) Causes of Delinquency. Berkeley: University of California Press.

Hirtenlehner H (2015) "Gelegenheit macht Diebe" oder "Wer raucht, der stiehlt". Der Beitrag der Situational Action Theory zur Erklärung der Ladendiebstahlskriminalität junger Menschen. *Monatsschrift für Kriminologie und Strafrechtsreform* **98**: 257–279.

Hirtenlehner H, Kunz F (2016) The interaction between self-control and morality in crime causation among older adults. *European Journal of Criminology* **13**: 393–409.

Hirtenlehner H, Treiber K (2017) Can situational action theory explain the gender gap in adolescent shoplifting? Results from Austria. *International Journal of Justice Review*, 1057567717690199. https://doi.org/10.1177/1057567717690199 **27**: 165–187.

Hirtenlehner H, Pauwels LJR, Mesko G (2014) Is the effect of perceived deterrence on juvenile offending contingent on the level of self-control?: Results from three countries. *British Journal of Criminology* **54**: 128–150. https://doi.org/10.1093/bjc/azt053

Junger-Tas J, Ribeaud D, Cruyff MJLF (2004) Juvenile delinquency and gender. *European Journal of Criminology* **1**: 333–375. https://doi.org/10.1177/1477370804044007

LaGrange TC, Silverman RA (1999) Low self-control and opportunity: Testing the general theory of crime as an explanation for gender differences in delinquency. *Criminology* **37**: 41–72. https://doi.org/10.1111/j.1745-9125.1999.tb00479.x

Loeber R, Farrington DP, Stouthamer-Loeber M, Van Kammen WB (1998) Antisocial behaviour and mental health problems. In Explanatory Factors in Childhood and Adolescence. Mahwah, NJ: Lawrence Erlbaum.

Mears DP, Ploeger M, Warr M (1998) Explaining the gender gap in delinquency: Peer influence and moral evaluations of behaviour. *Journal of Research in Crime and Delinquency* **35**: 251–266.

Messner SF (2012) Morality, markets, and the ASC: 2011. Presidential address to the American Society of Criminology. *Criminology* **50**: 5–25. https://doi.org/10.1111/j.1745-9125.2011.00264.x

Pauwels L (2012) How similar is the interaction between low self-control and deviant moral beliefs in the explanation of adolescent offending? An inquiry in sub groups by gender and immigrant background. In Fruili AS, Veneto LD (eds) Psychology of Morality. Nova pp: New York, NY pp. 141–153.

Pauwels LJR (2015) Über die Haltbarkeit der in der Situational Action Theory beschriebenen Interaktionseffekte in verschiedenen Bevölkerungsgruppen. Eine belgische Studie unter Jungen und Mädchen mit und ohne Migrationshintergrund. *Monatsschrift für Kriminologie und Strafrechtsreform* **98**: 280–296.

Pauwels LJR, Svensson R (2017) How robust is the moderating effect of extremist beliefs on the relationship between self-control and violent extremism? *Crime & Delinquency* https://doi.org/10.1177/0011128716687757 | First Published January 10, 2017 **63**: 1000–1016.

Piquero N, Gover AR, MacDonald JM, Piquero AR (2005). The influence of delinquent peers on delinquency. Does gender matter? *Youth & Society* **36**(3): 251–275. https://doi.org/10.1177/0044118X042656

Ribeaud D, Eisner M (2006) The 'drug-crime' link from a self-control perspective: An empirical test in a Swiss youth sample. *European Journal of Criminology* **3**: 33–67. https://doi.org/10.1177/1477370806059080

Schoepfer A, Piquero AR (2006) Self-control, moral beliefs, and criminal activity. *Deviant Behavior* **27**: 51–71. https://doi.org/10.1080/016396290968326

Smith D, Paternoster R (1987) The gender gap in theories of deviance. *Journal of Research in Crime and Delinquency* **24**: 140–172.

Stams GJ, Brugman D, Dekovic M, van Rosmalen L, van der Laan P, Gibbs JC (2006) The moral judgment of juvenile delinquents: A meta-analysis. *Journal of Abnormal Child Psychology* **34**: 697–713. https://doi.org/10.1007/s10802-006-9056-

Steketee M, Junger M, Junger-Tas J (2013) Sex differences in the predictors of juvenile delinquency: Females are more susceptible to poor environments; males are influenced more by low self-control. *Journal of Contemporary Criminal Justice* **29**: 88–105. https://doi.org/10.1177/1043986212470888

Svensson R (2015) An examination of the interaction between morality and deterrence in offending: A research note. *Crime & Delinquency* **61**: 3–18. https://doi.org/10.1177/0011128713486068

Svensson R, Ring J (2007) Trends in self-reported youth crime and victimisation in Sweden, 1995–2005. *Journal of Scandinavian Studies in Criminology and Crime Prevention* **8**: 153–177. https://doi.org/10.1080/14043850701517805

Svensson R, Pauwels L, Weerman FM (2010) Does the effect of self-control on adolescent offending vary by level of morality? A test in three countries. *Criminal Justice and Behavior* **37**: 732–743. https://doi.org/10.1177/0093854810366542

Tibbetts SG (2003) Self-conscious emotions and criminal offending. *Psychology Reports* **93**: 101–126.

Tittle CR, Ward DA, Grasmick HG (2003) Gender, age, and crime/deviance: A challenge to self-control theory. *Journal of Research in Crime and Delinquency* **40**: 426–453. https://doi.org/10.1177/0022427803256074.

Weerman FM, Hoeve M (2012) Peers and delinquency among girls and boys: Are sex differences in delinquency explained by peer factors? *European Journal of Criminology* **9**: 228–244. https://doi.org/10.1177/1477370811435736

Weerman FM, Bernasco W, Bruinsma GJN, Pauwels LJR (2015) Gender differences in delinquency and situational action theory: A partial test. *Justice Quarterly* **33**: 1182–1209. https://doi.org/10.1080/07418825.2015.106498710.1080/07418825.2015.1064987

Wikström P-OH (2006) Individuals, settings and acts of crime. Situational mechanisms and the explanation of crime. In Wikström P-OH, Sampson RJ (eds) The Explanation of Crime: Contexts, Mechanisms and Development. Cambridge: Cambridge University Press pp pp. 61–107.

Wikström P-OH (2010) Explaining crime as moral actions. In Hiltin S, Vaisey S (eds) Handbook of the Sociology of Morality. New York: Springer Verlag pp. 211–240.

Wikström P-OH, Butterworth DA (2006) Adolescent Crime: Individual Differences and Lifestyles. Cullompton, UK: Willian Publishing.

Wikström POH, Svensson R (2010) When does self-control matter? The interaction between morality and self-control in crime causation. *European Journal of Criminology* **7**: 395–410. https://doi.org/10.1177/1477370810372132

Wikström P-OH, Treiber K (2007) The role of self-control in crime causation: Beyond Gottfredson & Hirschi's general theory of crime. *European Journal of Criminology* **4**: 237–264. https://doi.org/10.1177/1477370807074858

Wikström P-OH, Oberwittler D, Treiber K, Hardie B (2012) Breaking Rules: The Social and Situational Dynamics of Young People's Urban Crime. Oxford: Oxford University Press.

Address correspondence to: Anna-Karin Ivert, Department of Criminology, Faculty of Health and Society, Malmö University, SE-205 06 Malmö, Sweden. Email: anna-karin.ivert@mah.se

Contract/grant sponsor: *Swedish Research Council*; contract/grant numbers: 2012-05545/HS24-09/1055.

DOI: 10.1002/cbm