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

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

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>
<thead>
<tr>
<th>Variable</th>
<th>Girls</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moral values</td>
<td>0.320***</td>
<td>0.362***</td>
</tr>
<tr>
<td>Self-control</td>
<td>0.381***</td>
<td>0.385***</td>
</tr>
</tbody>
</table>

***p < 0.001.
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).
Table 3: Linear regression predicting offending

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

Note: Parameter estimates (generalised linear modelling).
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.
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.

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References


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