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Abstract

In this study we examine whether feelings of anticipated shame and anticipated guilt when being caught for an offence mediate the relationship between parental monitoring, bonds with parents and school, deviant peers, moral values and offending. We use data from the SPAN project, a study that collected detailed information about offending, moral emotions and socialization among 843 adolescents in The Hague, the Netherlands. The results show that moral emotions of both anticipated shame and guilt have a strong direct effect on offending. The results also show that the relationship between parental monitoring, deviant peers, moral values and offending is substantially mediated by anticipated shame and guilt. This study clearly suggests that both shame and guilt need to be included in the explanation of offending.

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Keywords

Adolescent offending, anticipated guilt, anticipated shame, moral emotions, moral values, socialization

Introduction

Moral emotions, especially the moral emotions of shame and guilt, have been assumed to play an important role in restraining people from committing crimes (for example, Rebellon et al., 2010; Tibbetts, 2003). It is assumed that we do everything we can to avoid the painful feeling of the two emotions (for example, Elster, 1999; Tangney et al., 2007). A number of studies have reported a negative association between offending and the feeling of shame or the feeling of guilt (for example, Loeber et al., 1998; Rebellon et al., 2010). Additionally, there is empirical evidence that moral emotions like shame and guilt can be seen as a consequence of the socialization process (for example, Grusec, 2011; Tangney and Dearing, 2002). However, we know relatively little about the extent to which shame and guilt mediate the relationship between socialization variables (family and school bonds, parental monitoring and deviant peers), moral values and offending. The current study examines to which extent anticipated shame and guilt when being caught for an offence are both related to adolescent offending and to what extent the effects of these socialization variables are mediated by the levels of anticipated shame and guilt. We use data from the Study of Peers, Activities and Neighbourhoods, a self-report study conducted by the NSCR (Netherlands Institute for the Study of Crime and Law Enforcement) among 843 adolescents in The Hague, the Netherlands.

Theoretical background

Emotions play an important role in everyday life. Jon Elster commented: 'We do not choose to have them; rather, we are in their grip' (1989: 61). He went on to say that 'Emotions are the most important bond or glue that links us to others' (1999: 403). Some emotions are triggered by acts that violate moral rules of behaviour. These emotions are moral emotions. *Moral emotions* play a central role in guiding people's choice of behaviour and moral emotions are closely linked to moral behaviours (Lewis, 1992; Sheikh and Janoff-Bulman, 2010a; Tangney and Dearing, 2002). It has been suggested that the two most central moral emotions are shame and guilt (for example, Elster, 1999; Tangney et al., 2007).

Shame has been defined as one of the most important, painful and intensive of all emotions (Elster, 1999; Lewis, 1992; Scheff, 1997; Tangney, 1995). Shame emerges when an individual commits an act that violates internalized norms and feels that he or she has failed to live up to the norms of the group (Elster, 1999; Svensson, 2004a). It is not the act in itself that is important, it is the fact that the *individual* as a person has committed that act (for example, Tangney et al., 2007). The individual feels ashamed in front of other people. It has been pointed out that 'we often do everything we can to avoid the feeling of shame ... the anticipation of shame acts as a powerful regulator of behavior' (Elster, 1999: 154). *Guilt* on the other hand emerges when an individual commits a

specific act that violates prevailing norms and values and then judges the violation of the norm as a morally wrong act (Elster, 1999). Guilt is considered as less painful than shame since the emotion of guilt is related to a specific *act* whereas shame relates to the individual's perception of the self through the eyes of others and of these others' disapproval (Elster, 1999).

The moral emotions of shame and guilt emerge during the process of primary socialization, and the family is essential for the development of these emotions (for example, Barrett, 1995; Lewis, 1992; Sheikh and Janoff-Bulman, 2010b). The secondary socialization through school and the peer group may consolidate or adjust these emotions (for example, Elkin and Handel, 1989; Gecas, 2000). Individuals receiving strong parental support and subjected to love-oriented techniques of parental control internalize norms and learn moral values better than others, and will feel more shame and guilt when they violate rules (for example, Abell and Gecas, 1997; Grusec, 2011; Tangney and Dearing, 2002). Bonds with school will add to this process. Students who are attached or committed to school will be more receptive to the messages and expectations of teachers, who are usually law conforming (Hirschi, 1969; see also Maddox and Prinz, 2003). However, interaction with (deviant) peers may affect the process of adapting anticipated shame and guilt in a different way. First of all, an individual's moral values may be influenced by the attitudes and beliefs of peers (Sutherland, 1947; see also Megens and Weerman, 2012). Second, individuals may anticipate feelings of guilt and shame for *non*-offending when they believe that offending is needed to demonstrate loyalty to friends and to prevent ridicule (Warr, 2002).

If the socialization process is completed, norms will be internalized and the individual will develop a moral sense of what is right or wrong. This leads the individual to feel ashamed in relation to significant others and feel guilt if he or she commits a particular type of crime. The anticipated fear of the painful feeling of shame will therefore restrain individuals because he or she fails to live up to the standards of the group. On the other hand, the anticipated fear of guilt will restrain individuals from committing an act of crime because the individuals themselves view such an act as morally wrong and not because of the fear of social disapproval (for example, Harris, 2011; Svensson, 2004a). In other words, internalization of moral norms may lead to moral emotions of both shame and guilt, and both moral emotions are assumed to restrain individuals from delinquency. If on the other hand the socialization process is poor, internalization of norms and moral development will be adversely affected. This means that the individual will not feel shame or guilt when committing a crime. In that respect, the individual is then 'free to deviate' (Hirschi, 1969: 18).

Previous research

A number of criminological studies have found that shame is negatively related to offending. However, in some of these studies (for example, Blackwell, 2000; Grasmick and Bursik, 1990; Grasmick et al., 1993; Nagin and Paternoster, 1993), the measure of shame is more or less a measure of guilt, measuring whether a person would feel 'guilty' if they committed an offence. In other studies, shame is defined as *anticipated shaming*

(that is, personal expectations of shame in a specific situation, in particular when moral rule-breaking is detected and revealed to others; see Tibbetts, 1997). Rebellon et al. (2010) found a negative effect of anticipated shame on intentions to steal. In their study, people were asked how ashamed or embarrassed they would be if their family and friends got to know that they had stolen money from an employer's cash register. Svensson (2004b), Wikström and Butterworth (2006) and Wikström and Svensson (2008) also found anticipated shame to be negatively related to offending. In these studies, shame was measured as a positive response to the item 'Would you feel ashamed if you were caught shoplifting and/or breaking into a car and someone close (parents, friends, teachers) to you got to know?'

In other studies, often from a psychological perspective, shame has been defined rather as *shame-proneness* and guilt as *guilt-proneness* (that is, a stable trait of the individual; see Tibbetts, 1997). In some of these studies shame has been found to be positively related or unrelated to both actual offending and intentions to offend (Hosser et al., 2008; Stuewig and McCloskey, 2005; Tangney et al., 2007; Tangney et al., 2011; Tibbetts, 2003, 1997). In most of these studies guilt has also been included in the analysis, and feelings of guilt seemed to be negatively related to offending (Hosser et al., 2008; Stuewig and McCloskey, 2005; Tangney et al., 2011; Tibbetts, 2003; see also Loeber et al., 1998). Although there are a number of psychological studies that include both shame and guilt in the same study, this is something that is really uncommon in criminological studies.

In the current study, we will follow previous criminological studies that use anticipated and situational-dependent measures, by asking respondents whether they would feel ashamed or guilty if they were caught for certain criminal offences. It is not necessary that the individuals had committed a crime – the most important thing is whether the individual would feel ashamed or feel guilty about it. This would be a strong indication of their level of morality. Our conceptualization of shame diverges from the one used by Grasmick and colleagues (Grasmick and Bursik, 1990; Grasmick et al., 1993), which measures guilt instead of shame, and also from psychological measures that focus on shame-proneness without being detected. Our conceptualization is in line with the one that was used recently by Svensson (2004b) and Wikström and colleagues (Wikström and Butterworth, 2006; Wikström and Svensson, 2008), which focused explicitly on shame. Since previous criminological studies have not focused explicitly on guilt as a measure, we used a newly developed measure of anticipated guilt (derived from the PADS+ study; Wikström et al., 2012).

As mentioned, previous research has shown that moral emotions such as shame and guilt can be seen as result from the socialization process (for example, Abell and Gecas, 1997; Grusec, 2011; Tangney and Dearing, 2002). As far as we know, only three studies have examined whether shame and/or guilt mediates the relationship between socialization variables and offending (Piquero and Tibbetts, 1996; Rebellon et al., 2010; Svensson, 2004b). In a survey of 979 adolescents at the age of 14 years, Svensson (2004b) found that the relationship between family relations¹ and offending is completely mediated by anticipated shame for girls, and partially mediated by anticipated shame for boys. Using a sample of 439 university students in the social sciences, Rebellon et al. (2010) found only partial empirical evidence that the

relationship between strain, delinquent friends and self-control and intentions to steal is mediated by anticipated shaming. However, anticipated shaming mediated the entire relationship between perceived risk of getting caught and intentions to steal. Using scenarios among 642 undergraduates, Piquero and Tibbetts (1996) found that the relationship between moral beliefs and intentions to drink-drive and intentions to shoplift is substantially mediated by anticipated shaming.

Summarizing, shame and guilt are found to be negatively related to offending in criminological studies. Most previous studies have focused on either shame or guilt, and there is a lack of studies that focus on shame and guilt in the same study. In some of the studies, the measure of shame is rather poor and more a measure of guilt (for example, Blackwell, 2000; Grasmick and Bursik, 1990). Only three studies have examined whether moral emotions mediate the relationship between socialization variables and offending, but all of these studies have their limitations. In all of these studies, only shame has been used; in one study (Svensson, 2004b) only family-related variables have been included; in two studies (Piquero and Tibbetts, 1996; Rebellon et al., 2010) only intentions to commit crimes are investigated, not actual behaviour. In none of these studies have variables from all three central agents of socialization (that is, family, school, peers) and moral values been used, and in none of these studies are anticipated shame and anticipated guilt investigated simultaneously.

The current study

This study will extend previous research, examining whether shame and guilt mediate the relationship between offending and parental monitoring, school and family bonds, deviant peers and moral values. As far as we know, no previous study has included these factors in the same analysis. Furthermore, this study will improve upon problems that were identified in previous studies, using well-developed scale-based measures of anticipated shame and anticipated guilt and focusing on actual (self-reported) offending behaviour.

Against this background, we test the following hypotheses.

H1: Anticipated shame and anticipated guilt are negatively associated with offending.

H2: Bonds with parents and school and parental monitoring are negatively associated with offending whereas having deviant peers is positively associated with offending when demographic variables are controlled for (that is, there are effects of agents of socialization on offending).

H3: The effects of the variables that refer to agents of socialization decrease when moral values are introduced into the model. The effect of moral values is negatively related to offending.

H4: The effects of the variables that refer to agents of socialization and moral values decrease when anticipated guilt and anticipated shame are introduced into the model. Anticipated guilt and anticipated shame are negatively related to offending.

Method

Participants

The Study of Peers, Activities and Neighbourhoods (SPAN) conducted by the NSCR in the Netherlands investigates the associations between offending, individual characteristics, contextual influences and activity patterns. Of 40 secondary schools in the city of The Hague and its suburbs that were approached to cooperate in the study, 10 (one-quarter) responded affirmatively. Because there was interest in age differences, the study was conducted among secondary school 1st graders (mainly aged 12 and 13) and 4th graders (aged 15 and 16).² Parents were informed about the study and could refuse participation (passive consent).

In total, 843 adolescents (55 percent boys and 45 percent girls) in the age range 11–18 years participated fully in the study. The sample includes a relative high proportion of ethnic minority adolescents (47 percent), who are often underrepresented in criminological and other surveys. Many adolescents come from lower forms of secondary education: 18.5 percent from schools for ‘practical education’, the lowest level of secondary education, 53.3 percent from schools for lower vocational education (the most common form of secondary education), 9.6 percent from medium-level schools, and 18.6 percent from the highest level of secondary education. Because the sample was drawn from a non-random sample of schools in The Hague, it is not a representative sample of the youth living in The Hague, but it is highly diverse in terms of ethnicity and education, with an overrepresentation of lower-educated youths from a highly urbanized region of the Netherlands.

The study was carried out between October 2008 and April 2009 and included a survey among secondary school students. A questionnaire was administered to groups of four adolescents, supervised by one research assistant during a school period of about 45–50 minutes. This relatively intensive procedure ensured that adolescents were closely monitored, supported and stimulated, and that any questions or concerns that they had about the questionnaire could be addressed immediately. After completion, respondents received an incentive for their participation (a voucher for the movies, worth €5). Interviewer variance between the research assistants was estimated by the frequency of self-reported crimes and appeared to be almost zero (interviewer variance .253 with an error of 37.48). The questionnaire items had relatively low non-response and missing values (with a maximum of 2 percent). The questionnaire is based on the questionnaire of the PADS+ study of Wikström and colleagues (for example, Wikström et al., 2012). The items from this questionnaire were translated, extended with additional measurements and, when necessary, adjusted to the Dutch situation.

Measures

All scale constructs are summative scales of several items; most of them can be regarded as Likert-type scales. Theoretical considerations as well as factor analyses (forced one-factor solutions in an exploratory principal axis factoring analysis) and reliability analyses were used to construct the final scales. Although the item non-response was extremely low, imputation to assign acceptable values to missing data (using the EM method) was

employed to minimize loss of information.³ Detailed information on the wording and coding of the items and descriptive statistics of the scales are provided in the Appendix.

Total offending comprises 20 items that tap how often the respondent has committed various types of crime during the past year, ranging from minor to very serious offences. The reliability coefficient (Cronbach's alpha) of this total scale is .90. Square root transformed values are used in the analysis because of potential problems of obtaining unbiased parameters resulting from the positive skewness of the offending variable.⁴

Anticipated shame feelings measures the extent to which an adolescent would feel ashamed towards significant others if he or she had been caught committing an offence. The scale is based on six items with an alpha value of .87. High scores indicate high levels of shame feelings.

Anticipated guilt feelings measures the extent to which an adolescent would feel guilty if he or she had broken moral rules. The scale is based on six items with an alpha value of .80. A high score indicates a high level of guilt.

Moral values measures the adolescent's level of tolerance towards moral rule-breaking. The construct is an index of the respondent's evaluation of 16 situations of potential wrong-doing. Alpha is .91. High scores on this scale indicate high levels of moral values.

Bond with parents measures the extent of the emotional relationship between child and parents. The scale consists of seven items. Alpha for this scale is .68, which is somewhat lower but still sufficient. High scores on this scale state that the respondents have strong emotional bonds to their parents.

Parental monitoring indicates whether parents are actually actively doing something to keep track of their children's whereabouts. The monitoring scale consists of five items with an alpha of .77. A high score on this scale indicates that the respondents are strongly monitored by their parents.

Bond with school indicates attachment and commitment of the adolescent to school, teachers and classmates. The scale is measured by seven items with an alpha value of .65. High scores indicate that the respondents are strongly bonded to their school.

Deviant peers measures the amount of delinquent and risky behaviour of the adolescent's peers. It is measured by an index of six questions about the frequency of offending, breaking rules and substance use by peers. Alpha is .82. High scores on this scale indicate that their friends often committed various types of deviant acts.

Gender is coded as 0 for boys and 1 for girls (mean = .45).

Immigrant background is coded 0 when both parents are native and 1 if at least one of the parents was born abroad (mean = .45).

School year is coded 0 for those in the first year of secondary school (ages 12 and 13), and 1 for those in the fourth year (ages 15 and 16) (mean = .50).

Analytic strategy

Apart from descriptive analyses and the calculation of straightforward correlations, we used Tobit regression analysis to estimate multivariate effects. Osgood et al. (2002) proposed Tobit regression (Amemiya, 1984; Long, 1997) as an alternative method for the analysis of self-reported offending. The Tobit regression model is a

censored regression model in which the dependent variable (here, offending) is a latent variable whose values at and beyond a threshold (in the case of offending, 0) are censored, which means that they are partially observed (what is known is that they fall below the cut-off point).

Tobit regression was chosen above other analytical options (such as OLS and negative binomial regression) for theoretical and empirical reasons. Theoretically, the basic assumptions of Tobit regression seem to fit the nature of offending. Respondents below the threshold, those who did not offend in the past 12 months, are a varied group of adolescents: some of them would never break the law (they would have a 'negative tendency to commit offending' if that could be observed), others may have a larger potential to offend or have committed offences other than the specific ones listed in the questionnaire. Empirically, Tobit regression analysis appeared to fit the distribution of our dependent variable (when transformed) better than a negative binomial regression analysis or simple OLS regression. This was indicated by a comparison of the Akaike Information Criterion (AIC) for 'constant-only models' without any covariates. The AIC is a goodness-of-fit measure that can be used to select the most appropriate model. Tobit regression with a square root transformation of the total offending scale was the model with the lowest AIC value among a number of alternative modelling strategies (OLS and negative binomial, transformed and untransformed). Before conducting the regression analyses, all independent variables were standardized to facilitate the comparison of effect estimates.

Hypotheses about the mediating role of anticipated shame and anticipated guilt imply not only within-model tests (for example, does anticipated shame significantly affect offending?) but also cross-model tests (for example, is the effect of moral values on offending significantly reduced when anticipated guilt and anticipated shame are added to the model?). In order to test cross-model hypotheses we used a method described in Clogg et al. (1995). It combines the parameter estimates and covariance matrices of two (or more) models into a single parameter vector and simultaneous covariance matrix, on which both within-model or cross-model tests can be performed. We used the *suest* module implemented in the Stata software package (StataCorp, 2007).

Findings

Table 1 presents a correlation matrix for all variables included in the analysis. The independent variables are related to offending in the expected direction, that is, the weaker the bonds to parents and to school, the more close friends commit deviant or criminal acts and the more tolerant an individual is towards criminal acts, the more he or she offends. The results also show that the less an individual would feel guilty if he or she broke moral rules and the less an individual would feel ashamed towards significant others if he or she had been caught for committing an offence, the more he or she offends. Further, all of the independent scales are significantly related to each other. Although the correlation between shame and guilt is rather high (0.72), multicollinearity was not a problem in any of our analysis, where the highest Variance Inflation Factor Score was 2.83, well below commonly accepted rules of thumb.

Table 1. Correlation matrix (Pearson's *r*)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Gender (being a girl)	1.00										
2. School year (fourth year)	-0.01	1.00									
3. Immigrant background	0.06	-0.07*	1.00								
4. Bond with parents	0.07	-0.15***	-0.05	1.00							
5. Parental monitoring	0.30***	-0.23***	0.07	0.33***	1.00						
6. Bond with school	0.14***	-0.18***	0.13***	0.34***	0.29***	1.00					
7. Deviant peers	-0.19***	0.36***	-0.01	-0.33***	-0.41***	-0.28***	1.00				
8. Moral values	0.18***	-0.32***	0.22	0.32***	0.44***	0.39***	-0.52***	1.00			
9. Anticipated guilt	0.32***	-0.25***	0.08*	0.33***	0.51***	0.36***	-0.51***	0.64***	1.00		
10. Anticipated shame	0.29***	-0.14***	0.08*	0.30***	0.48***	0.27***	-0.48***	0.52***	0.72***	1.00	
11. Offending (sq. root)	-0.28***	0.12***	0.02	-0.32***	-0.45***	-0.32***	0.61***	-0.52***	-0.60***	-0.55***	1.00

p* < .05; *p* < .01; ****p* < .001.

Table 2 presents three Tobit regression models which estimate the effects of the independent variables on total frequency of offending. In the first model, the agents of socialization and the demographic variables are included. The results show that all agents of socialization have significant effects on offending. Bond with parents has a negative statistical effect on offending (-0.18), bond with school has a negative effect on offending (-0.29), and parental monitoring has a negative effect on offending (-0.40). Deviant peers have a strong positive effect on offending (1.01). The results also show that gender (being a boy) and school year are significantly related to more offending. The magnitude of the regression coefficients indicates that deviant peers have the strongest independent relation to offending in this model.

In the second model, when moral values are included in the model, the effects of the parental, school and peer-related variables on offending decrease significantly. Confirming the third hypothesis, this indicates that the effect of parental monitoring, bond with parents, bond with school and deviant peers on offending is substantially mediated by moral values. Furthermore, moral values have a negative effect on offending. The results also show that deviant peers have the strongest effect on offending in this model. The effect of immigrant background on offending becomes significant in Model 2.

Finally, anticipated shame and anticipated guilt are included in the third model. In support of the fourth hypothesis, the effects of the socialization agents parental monitoring and deviant peers decrease significantly when anticipated guilt and anticipated shame are entered into the equation. The effect of moral values also decreases significantly, from -0.52 to -0.24 . The effects of the demographic variables remain rather unaffected

Table 2. Tobit regression predicting offending (sq. root)

Variables	Model 1	Model 2	Model 3
Gender (being a girl)	-0.29^{***}	-0.27^{***}	-0.17^{**}
School year (fourth year)	-0.28^{***}	-0.33^{***}	-0.31^{***}
Immigrant background	0.11	0.20^{**}	0.18^{**}
Bond with parents	-0.18^*	-0.12	-0.09
Parental monitoring	-0.40^{***}	-0.30^{***}	-0.16^*
Bond with school	-0.29^{***}	-0.20^{**}	-0.17^*
Deviant peers	1.01^{***}	0.84^{***}	0.72^{***}
Moral values		-0.52^{***}	-0.24^{**}
Anticipated guilt			-0.47^{***}
Anticipated shame			-0.23^{**}
Pseudo R^2	0.14	0.16	0.18
Constant	1.58^{***}	1.58^{***}	1.59^{***}
LL	-1354.81	-1331.92	-1300.76

Notes: $N = 837$. The coefficients for school year, immigrant background, bond with parents, parental monitoring, bond with school and deviant peers in Model 2 are significantly different from those in Model 1 ($p < .01$). The coefficients for gender, parental monitoring, deviant peers and moral values in Model 3 are significantly different from those in Model 2 ($p < .01$).

* $p < .05$; ** $p < .01$; *** $p < .001$.

in this final model. Both anticipated shame and guilt appear to have independent effects on offending, when controlling for the effects of agents of socialization, moral values and the demographic variables.

Discussion and conclusion

In this paper we argued that moral emotions may play an important role in understanding offending. Previous research suggests that a successful socialization process, resulting in internalized moral values, leads to feelings of anticipated shame and guilt when considering offending. This implies that feelings of anticipated shame and anticipated guilt may substantially mediate the relationship between parental monitoring, bonds with parents and school, deviant peers, moral values and offending. Against this background we formulated four hypotheses.

First, we expected that anticipated guilt and anticipated shame were associated with offending. In line with previous studies, we found substantial negative correlations between offending and anticipated guilt and shame and thus support for the first hypothesis. Second, we assumed that bond with parents and school and parental monitoring are negatively associated with offending whereas deviant peers are positively associated with offending. This second hypothesis was also supported by our data: each of the socialization agents, that is, parents, school and peers, had significant independent effects on offending. Third, we hypothesized that the effects of these variables referring to agents of socialization would decrease when moral values are introduced in the model, and that the effect of moral values is negatively related to offending. We found empirical support for the third hypothesis.

Finally, and most importantly, we assumed that the relationship between the socialization variables, moral values and offending would be mediated by the level of anticipated guilt and anticipated shame. Findings indicate support for the fourth hypothesis. The results show that the effects of parental monitoring and deviant peers as well as the effect of moral values on offending decrease when anticipated shame and guilt are included in the analysis. This is in line with previous studies that also found evidence that the effects of family-related variables and moral values on offending are mediated by the level of shame (Piquero and Tibbetts, 1996; Svensson, 2004b), but extends one other study that could not find evidence that the effect of deviant peers is mediated by the level of shame (Rebellon et al., 2010). Further, that the relationship between parental monitoring and offending seems to be mediated by the level of anticipated shame and anticipated guilt may be explained by the fact that the development of morality and shame and guilt is primarily the result of parental socialization.

Although the present study used well-developed measures of anticipated shame and anticipated guilt, some limitations of this study should be taken into account. First, the current study is, like many studies in this area, cross-sectional in nature: shame and guilt are measured at one point in time, and offending is measured using questions that refer to past behaviour. We do not rule out the possibility that the relationship between offending and the development of feelings such as shame and guilt is reciprocal, and longitudinal studies may shed more light on the causal order of the relationship. Further, the present study focused on the effects of socialization variables and moral emotions

on offending. Future enquiries may provide more insight into the causes and development of shame and guilt by investigating them as dependent variables.

Despite these limitations, this study clearly showed the importance of using both shame and guilt as measures of morality in the explanation of offending. Both of these emotions are painful and it seems that the fear of experiencing these pains if detected is able to restrain individuals from engaging in crime. It is important to note that both emotions are related to offending, since they are based on different mechanisms: the inhibiting effect of shame is based on the fear of feeling ashamed in relation to significant others, whereas guilt inhibits individuals from committing a particular type of crime because they think it is a morally wrong act.

Our findings may have important consequences for criminological theory in general, suggesting that moral emotions may be necessary components in theories that attempt to explain who is delinquent and who is not. Currently, there are two criminological theories that already explicitly mention the role of moral emotions: Situational Action Theory (Wikström, 2006, 2010) and Reintegrative Shaming Theory (Braithwaite, 1989). Braithwaite (1989) focused on the effect of shaming as a consequence when an individual has committed a crime. His theorizing suggests that shaming the offender for what he or she has done in an integrative way may decrease future offending. In Situational Action Theory, shame and guilt have a very important role, since morality is regarded as the primary cause of crime (Wikström, 2010). Wikström (2010) argues that shame and guilt are essential dimensions of what he calls 'the moral filter'. By this concept he means that perceived opportunities for offending are filtered and evaluated through a person's moral values and emotions. Our results show that the inclusion of moral emotions in these integrative theories is warranted.

Finally, our results suggest that shame and guilt may be important from the perspective of crime prevention. It seems, as Braithwaite (1989) argued, that making offenders ashamed of an act of crime may be one key to successful crime prevention, provided that it leads to anticipated shame and/or guilt. Our results suggest that 'integrative guilt' may be a possible addition to the theory. Moreover, our study suggests that another strategy would be to strengthen conventional social bonds and optimize parenting practices leading to the development of moral emotions that can prevent crime before it happens. This may be even more important than providing suitable reactions on offending, since socialization processes are responsible for the development of anticipated shame and guilt in the first place.

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Notes

1. Family relations are measured as an overall scale based on child disclosure, parental concern and emotional relationship.
2. The 1st grade is similar to the 7th grade in the USA; the 4th grade is similar to the 10th grade.

3. Factor and reliability analyses are based on the imputed variables (although results using non-imputed scores are virtually identical).
4. The highly skewed distribution of self-reported offending violates key assumptions of OLS regression, especially the assumption that residual variance is constant. Fitted (estimated) values are often less accurate for higher levels of offending, where cases are widely dispersed, than are fitted values near the lower limit of zero offences. Square root transformation is a way to limit these violations.

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Appendix

Items and alpha scores relating to the measurements

Construct	Alpha	Items
<i>Offending</i>	.90	<p>During the past year, how often have you ... damaged or destroyed something, for example bicycles, bus stop shelters, lampposts or something else? set a fire (for example in a building, house, bus or car)? stolen something from a store that was worth less than €5, for example candy, pens or something else? stolen something from a store that was worth more than €5, for example clothing, DVDs or something else? bought something from someone when you knew or thought it was stolen, for example a bicycle, clothes or something else?/stolen a bicycle? stolen a scooter or a moped? broken into a house to steal something? broken into a car to steal something? broken into somewhere else to steal something (for example in a shop, a school or a company)? robbed someone? stolen anything covertly from another person (for example, money, a mobile telephone, a bicycle, a wallet or a purse, a hand-bag, jewellery, a watch)? threatened to scare someone or make him or her do something? kicked or hit somebody on the street (we do NOT mean play and horsing around)? kicked or hit somebody who was injured as a result? sold drugs such as weed or hash? sold drugs such as XTC, cocaine, speed or something else? carried a knife or other weapon? used a knife or other weapon? <i>Answering alternatives: 0 times / 1 time / 2 times / 3–5 times / 6–10 times / more than 10 times (range = 0–10; mean = 1.90; SD = 1.76)</i></p>
<i>Anticipated shame</i>	.87	<p>If you were caught shoplifting and your mother or father found out, would you feel ashamed? If you were caught shoplifting and your teacher found out, would you feel ashamed? If you were caught shoplifting and your friend found out, would you feel ashamed? If you were caught breaking into a car and your mother or father found out, would you feel ashamed? If you were caught breaking into a car and your teacher found out, would you feel ashamed?</p>

(Continued)

Appendix. (Continued)

Construct	Alpha	Items
<i>Anticipated guilt</i>	.80	<p>If you were caught breaking into a car and your friend found out, would you feel ashamed?</p> <p><i>Answering categories: No, not at all / Yes, a bit / Yes, very much (range = 6–18.02; mean = 14.89; SD = 3.12)</i></p> <p>Would you feel guilty if you did something your parents (step-parents) have told you absolutely not to do?</p> <p>Would you feel guilty if you cheated on a test in school?</p> <p>Would you feel guilty if you teased another pupil so he or she started to cry?</p> <p>Would you feel guilty if you had stolen something in a shop?</p> <p>Would you feel guilty if you hit another pupil who made a rude remark to you?</p> <p>Would you feel guilty if you broke into a car and stole something?</p> <p><i>Answering categories: No, not at all / Yes, a bit / Yes, very much (range = 6–18; mean = 13.00; SD = 2.91)</i></p>
<i>Bond with parents</i>	.68	<p>How often do you talk to your parents (or step-parents) about how you do in school or get along with your friends? (<i>Answering codes: Almost never / A few times a month / A few times a week / Almost every day</i>)</p> <p>Do you talk to your parents if you have a problem or feel sad about something? (<i>No, almost never / Sometimes / Usually I do / Yes, always</i>)</p> <p>How often do you do something nice or fun together with your parents? (<i>Almost never / A few times a year / Once or a few times a month / Once or a few times a week</i>)</p> <p>How often do you eat evening meals together? (<i>Almost never / A few times a week / Several times a week / Almost every day</i>)</p> <p>How often do you argue with or squabble with your parents? (<i>Almost never / A few times a week / Several times a week / Almost every day</i>)</p> <p>I can see that my parents love me (<i>No, almost never / Sometimes / Usually yes / Yes, always</i>)</p> <p>I would rather be outside home or with someone else than with my parents (<i>No, almost never / Sometimes / Usually yes / Yes, always – reverse coded</i>)</p> <p>(<i>Range = 9–28; mean = 22.83; SD = 3.44</i>)</p>
<i>Parental monitoring</i>	.77	<p>I can go out at night (after 7 pm) without having to tell my parents (reverse coded)</p> <p>If I come back later than the agreed time, my parents expect me to tell them where I was and with whom</p> <p>If I am too late coming home at night (after 7 pm), my parents go out to find me</p> <p>If I go away from home, my parents expect me to tell them where I am going, with whom and what I'm going to do</p>

Construct	Alpha	Items
<i>Bond with school</i>	.65	<p>My parents expect me to tell them where I am going at weekends and what I'm going to do <i>Answering categories: Totally agree / Agree / Neither agree nor disagree / Disagree / Totally disagree (range = 5–25; mean = 16.74; SD=2.82)</i></p> <p>I like to go to school I get along well with most of my teachers I get along well with most of my classmates Sometimes, I have stayed away from school during the last year because I was afraid of being beaten up or bullied (reverse coded) I get good grades at school How much time do you spend each day on homework? If you could leave school tomorrow, would you do that (reverse coded)? <i>Answering categories: Totally agree / Agree / Neither agree nor disagree / Disagree / Totally disagree (range = 13–33; mean = 25.73; SD = 3.40)</i></p>
<i>Deviant peers</i>	.82	<p>How often do your friends... skip school without excuse? get drunk? use drugs? steal something from others or from shops? destroy things that do not belong to them? beat up or get into fights with others? <i>Answering categories: (Almost) never / Sometimes / Often (every month) / Very often (every week) (range = 5.92–23.00; mean = 9.04; SD = 3.44)</i></p>
<i>Moral values</i>	.91	<p>How wrong it is to... ride a bike through red light? skip doing homework for school? skip school or work without an excuse? lie, disobey or talk back to teachers? go skateboarding in a place where skateboarding is not allowed? tease a classmate because of the way he or she dresses? smoke cigarettes? get drunk with friends on a Friday evening? hit another young person who makes a rude comment? steal a pencil from a classmate? paint graffiti on a house wall? smash a street light for fun? smoke cannabis?</p>

(Continued)

Appendix. (Continued)

Construct	Alpha	Items
		<p>steal a CD from a shop?</p> <p>break into or try to break into a building to steal something?</p> <p>use a weapon or force to get money or things from another young person?</p> <p><i>Answering categories: Not at all wrong / A bit wrong / Wrong / Very wrong (range = 16–64; mean = 33.83; SD = 9.49)</i></p>
