

Deterrence and the Moral Context: Is the Impact of Perceived Sanction Risk Dependent on Best Friends' Moral Beliefs?

Hirtenlehner, Helmut; Schulz, Sonja

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Helmut Hirtenlehner¹  and Sonja Schulz²

Abstract

Research on differential deterrability suggests increasingly that the size of a potential sanction risk effect is conditional on characteristics of the person and properties of the setting. Whether the moral context of young people's action settings shapes adolescents' responsiveness to deterrent cues has been a neglected issue, however. Since youths spend much time in the company of their peers, close friends' stance toward crime may serve as a measure of the moral makeup of the immediate environment in which young people make behavioral choices. Based on a longitudinal adolescent self-report survey, we test whether the impact of an individual's sanction certainty perceptions varies according to the level of his or her best friends' moral beliefs regarding selected acts of rule-breaking. Lagged negative binomial regression analyses provide mixed support for the hypothesis that perceived sanction risk matters more for adolescents whose close friends encourage criminal activity. These findings have wider implications for perceptual deterrence research: They suggest that efforts to specify the conditions under which sanction certainty perceptions are related to offending should concentrate on the presence of criminogenic factors.

Keywords

individual theories of crime causation, crime/delinquency theory, crime policy, courts/law, quantitative methods, other

Problem and Research Aim

For more than two centuries, deterrence theory has been representing one of the most prominent explanations of criminal conduct (Beccaria, 1764; Bentham, 1789). The theory posits that actual or

¹ Centre for Criminology, Johannes Kepler University Linz, Austria

² GESIS—Leibniz Institute for the Social Sciences, Cologne, Germany

Corresponding Author:

Helmut Hirtenlehner, Centre for Criminology, Johannes Kepler University Linz, Altenberger Strasse 69, A – 4040 Linz, Austria.

Email: helmut.hirtenlehner@jku.at

threatened punishment prevents the perpetration of acts of crime by creating fear of sanctions. Despite the plausibility of the argument, the state of research on the effectiveness of criminal deterrence is still inconclusive. Evidence in favor of a nonnegligible crime-reducing impact of sanctioning severity is scant, whereas a significant portion of the available empirical studies supports the presence of a weak or modest deterrent effect of the certainty of punishment (Dölling et al., 2009; Paternoster, 2010; Pratt et al., 2006). Consensus is limited to the “certainty not severity” conclusion that identifies the likelihood of being sanctioned as the more effective deterrent (Apel & Nagin, 2011, p. 413).

Difficulties in establishing substantial unconditional deterrent effects of legal sanction threats, but also recent theoretical developments (Wikström, 2008, 2010) may be the reason why the idea of differential deterrability (Hirtenlehner, 2019; Loughran et al., 2018; Piquero et al., 2011) has become popular in recent years. Building on perceptual deterrence theory (Geerken & Gove, 1975), differential deterrability suggests that the effect of sanction threats is not uniform across individuals and situations. People are assumed to differ in their susceptibility to sanction risk, and settings are assumed to differ in their capacity for deterrence. Instead of claiming that deterrence affects all individuals equally, it is acknowledged that the degree to which an individual responds to the risk of formal punishment will depend on a variety of other factors, among them characteristics of the person and properties of the setting (likewise the type of crime in question).

Besides self-control, personal morals have received most attention as potential moderator of an individual’s responsiveness to deterrent cues (e.g., Gallupe & Baron, 2014; Hirtenlehner & Hardie, 2016; Hirtenlehner & Mesko, 2019; Kroneberg et al., 2010; Pauwels et al., 2011; Piquero et al., 2016; Svensson, 2015; Wenzel, 2004). A slight majority of the relevant studies show that perceived sanction risk is more consequential among those of weak morality. Individuals holding strong law-consistent moral beliefs are less influenced by their perceptions of sanction certainty.

However, to what extent the moral rules that dominate in the setting in which the action takes place condition the size of a possible sanction risk effect has been a neglected issue in perceptual deterrence research. Few studies took up the question whether and how the moral makeup of the immediate surroundings (the moral context)¹ shapes the effectiveness of legal sanction threats. In these works, the moral nature of the action setting has usually been operationalized as the level of involvement with delinquent peers. The obtained evidence on the interaction of deterrence and affiliation with crime-prone others has remained inconclusive. The first inquiry that addressed this issue found that higher levels of delinquent peer association reduced the impact of young people’s sanction certainty perceptions (Matthews & Agnew, 2008). Subsequent studies came to opposite conclusions, showing that perceived sanction risk exercises a greater effect among adolescents who are more involved with delinquent peers (Hirtenlehner, 2019; Hirtenlehner & Bacher, 2017; Schepers & Reinecke, 2018).

Inspired by some of Situational Action Theory’s (SAT; Wikström, 2010, 2019) reflections on the significance of the current moral context for the perception of action alternatives, we assume that stronger ties to crime-prone age-mates amplify the deterrent impact of young people’s sanction certainty perceptions. Because adolescents tend to spend much time together with their friends (Warr, 2002), the moral context of their immediate action settings is often formed by the attitudes and beliefs of their peers (Hirtenlehner & Hardie, 2016). We argue that ample exposure to friends who welcome and encourage criminal conduct provides adolescents with augmented opportunities for crime, leads them into temptation to exploit the benefits of crime, and makes them perceive crime as an acceptable action alternative more frequently. All this brings legal sanction risk into play as a potential behavioral regulative, therewith establishing a dependency of deterrent effects on the moral attitudes of young people’s close friends. Hence, our concrete research question is “Does the deterrent effect of young people’s sanction certainty perceptions depend on their best friends’ moral beliefs concerning the justifiability of offending?” The underlying substantive hypothesis posits that

sanction certainty effects are larger for adolescents whose close friends approve of criminal activity. Nonetheless, although the research-guiding hypothesis is influenced by selected arguments of SAT, the present work is not designed as an explicit test of this theory. As will be outlined in the next section, our conceptualization of the interplay of deterrence and the moral context of action differs from the relevant considerations of SAT in nonnegligible ways.

To investigate the interaction of perceived sanction risk and the moral nature of the current immediate environment, we draw on well-suited secondary data from the “Youths and Deterrence Survey” (Paternoster, 2001) and take students’ perceptions of their best friends’ moral beliefs about various infringements as a proxy measure of the moral context they frequently encounter. This enables us to test whether exposure to friends who appreciate or tolerate criminal activity enhances the protective impact of perceived sanction risk. With that, we provide a novel contribution to the literature: While previous studies focused on peer delinquency as a possible moderator of deterrent effects, the present work sheds light on the conditioning role of best friends’ moral attitudes regarding crime. We will argue that close friends’ moral views represent a more accurate measure of the moral condition of young people’s immediate environment than peers’ delinquent behavior. As best friends’ moral beliefs have not yet been used as a measure of the moral rules prevailing in a setting, this study provides a unique contribution to the analysis of the interplay of the moral context of action and the effectiveness of legal sanction risk.

Deterrence and the Moral Context

From General Deterrence to Differential Deterrability

Deterrence has been conceptualized as the omission of an act of crime because of the fear of negative sanctions, with the fear of sanctions being dependent on the certainty, severity, and celerity of punishment. Classical deterrence theory assumes that fear of legal sanctions causes all people to refrain from crime (Beccaria, 1764; Bentham, 1789). It is based on the premises that (1) human action is motivated by seeking pleasure and avoiding pain, (2) decisions to offend are made by balancing the costs and benefits of action alternatives, and (3) individuals choose and act at least minimally rational. People will violate the law when the expected benefits of doing so outweigh the expected costs. The role of legal sanctions in preventing crime is thus to ensure that the costs of offending indeed exceed its benefits.

Contemporary models of deterrence recognize that often choices must be made among two or more alternatives, with at least one of them involving crime (Nagin, 2013; Paternoster, 2010; Wikström, 2008). From the set of the considered action alternatives, individuals will choose the one with the best cost–benefit ratio (as perceived by the actor). It follows that people will break the law when crime promises the most attractive cost–benefit balance (i.e., the highest net utility). The task of legal sanctions in averting crime is therefore to increase the costs of offending to a level that guarantees the choice of a lawful action alternative.

Deterrence theory has stimulated plenty of inquiry but not obtained the level of empirical support its advocates expected (for comprehensive reviews of the pertinent state of research see Apel & Nagin, 2011, 2017; Dölling et al., 2009; Loughran et al., 2016; Nagin, 2013, 2018; Paternoster, 2010, 2018; Paternoster & Bachman, 2013; Pratt et al., 2006). Evidence in favor of unconditional deterrent effects has remained rather moderate. As Pratt and Turanovic (2018, p. 197) point out, “[t]he variables specified by deterrence theory are, at best, only weakly associated with offending.”

The harshness of legal penalties failed to exert a substantial crime-reducing impact in many studies. Neither actual nor perceived sanction severity could be established as a robust predictor of crime involvement.

Research on the consequences of the certainty of legal punishment produced somewhat more support for deterrence theory. Most ecological analyses relating criminal justice policies to local crime rates tend to reveal slight associations between measures of the likelihood of being sanctioned and the level of criminal activity in a jurisdiction (even those that draw on the correct temporal ordering of the concepts). Cross-sectional perceptual deterrence studies consistently show that perceived sanction risk is inversely correlated with self-reported offending. However, these correlations often drop to nonsignificance with the inclusion of control variables. Cross-sectional relationships have also been criticized for depicting experiential effects (effects of previous behavior on subsequent perceptions of risk)² instead of deterrent effects (effects of current perceptions of risk on future behavior). Longitudinal studies were introduced to defuse the endogeneity or simultaneity issue. Panel surveys that establish the correct causal ordering of the involved concepts and incorporate multiple control variables frequently find more support for experiential than for deterrent effects. That said, it must be noted that a few longitudinal perceptual deterrence studies could nonetheless observe significant crime-dampening implications of perceived sanction risk. Scenario analyses demonstrate more consonantly that people's sanction certainty perceptions are an important source of compliance but have been criticized for a lack of predictive validity.³

The difficulties in establishing substantial deterrent effects in the general population or the investigated overall samples made scholars wonder whether deterrence might have different effects on different people. The observation that the investigated study populations—mostly adolescents and young adults—as a whole are not overwhelmingly responsive to legal sanction threats may be due to disregarded heterogeneity and mask the existence of small subgroups of respondents for whom deterrence significantly matters (Hirtenlehner, 2019). The concept of differential deterrability refers to the fact that not all individuals are equally receptive to formal sanction risk (Loughran et al., 2018; Piquero et al., 2011). Some individuals are more likely to be affected by their sanction risk perceptions than others, whereby the susceptibility to deterrence may vary in dependence on characteristics of the person and properties of the setting as well as the concerned offense.

For our purposes, evidence regarding a dependency of deterrent effects on moral factors is particularly instructive. With a view to the role of an individual's own law-relevant morality, several studies show that perceived sanction risk exerts a greater influence on the level of criminal activity among individuals with weak personal morality (Hirtenlehner & Hardie, 2016; Hirtenlehner & Mesko, 2019; Kroneberg et al., 2010; Svensson, 2015; Wenzel, 2004). The underlying argument normally is that those who have not internalized a society's moral rules are more likely to consider crime for action, which renders deterrence relevant as a potentially restraining force. However, not all empirical works can replicate this conditional relationship (Cochran, 2015; Gallupe & Baron, 2014; Pauwels et al., 2011; Piquero et al., 2016). The failure to observe greater deterrent effects among individuals holding weak law-consistent moral beliefs may be explained by low variance in the employed morality measures due to the reliance on special study populations (e.g., university students, street youths, incarcerated felons) and methodological problems in terms of the conducted statistical interaction analyses (see the Method section of this article).

The Moderating Role of the Moral Context

Whether the magnitude of the sanction risk effect depends on the nature of the moral context of action has received less attention. Only very few works have addressed the interaction between properties of the moral context and the efficacy of deterrence, and most of the relevant empirical studies relied on exposure to peer delinquency as a measure of the moral makeup of the current immediate environment.

The concept and significance of the moral context has been elaborated in SAT (Wikström, 2010, 2019). In this theory, a setting's (the current immediate environment's) "tendency to induce crime as

an action alternative in response to its opportunities and frictions” (Wikström, 2019, p. 269) depends in part on the moral context it presents, with the latter referring to the law-relevant rules of conduct that apply to the setting.⁴ Since people tend to care about what others think about their actions, which behavioral rules dominate in a setting is partly determined by the expectations and views (regarding what is the right or wrong thing to do) of those participating in the setting. Similar to an individual’s own morality, the perceived moral norms of a setting provide rule-guidance in the sense that they specify which responses to the opportunities and frictions a person encounters in the setting constitute acceptable behavior.

According to SAT, “people commit acts of crime when they see and choose crime as an action alternative in a given setting” (Treiber, 2017, p. 51). Criminal activity represents the result of a two-step perception-choice process (Wikström et al., 2012). Perception refers to the fact which action alternatives are taken into consideration as a possible response to a given motivation in a particular setting. What alternatives individuals envision for action is determined by the so-called moral filter that is shaped by both the individual’s own morality and the current moral context. A law-consistent moral context reduces the likelihood that crime can overcome the moral filter and enter the set of the perceived behavioral options. A crime-conducive moral context, on the other hand, raises the probability that crime passes the moral filter and is being seen as a viable action alternative. Personal morality fulfills a similar function: Crime-discouraging morals decrease and crime-encouraging morals increase the likelihood that crime is being contemplated.

Choice refers to the formation of the intention to carry out a particular action alternative (Wikström, 2019, p. 273). Controls, among them external deterrence, influence choice when an individual contemplates both criminal and noncriminal action alternatives. Thus, a prerequisite for deterrence to come into play is a permeability of the moral filter. Controls are necessary only when people take crime into consideration as a justifiable alternative (which is more likely to happen when the moral context encourages offending).

At this juncture, we have to disclose that our understanding of the interplay of the moral context and the effectiveness of deterrence is influenced by important insights of SAT but differs from this theory’s propositions in nonnegligible ways. We are well aware that SAT draws a more complex picture of the interrelationships of the components of the moral filter and the impact of deterrence than we do. For SAT, which action alternatives an individual perceives as a possible response to a given motivation depends on the interaction of the person’s own moral rules and the moral norms of the setting he or she is currently exposed to. Controls are assumed to come into play in the process of choice only when (i) the individual deliberates how to act, (ii) crime has overcome the moral filter and is being regarded as a viable action alternative, and (iii) a moral conflict produces incongruent rule-guidance. According to the theory’s principle of the conditional relevance of control, deterrence should become influential merely when an individual’s own moral rules encourage offending while the moral norms of the setting discourage criminal conduct. The principle of moral correspondence states that all sorts of controls are irrelevant when personal morality and setting morality provide congruent rule-guidance (Wikström, 2010; Wikström et al., 2012).

This study does not aim to test this elaborate argument. In deviation from SAT’s original conceptualization of the conditional relevance of deterrence, we assume that both crime-conducive personal morals and a crime-facilitating moral context weaken the moral filter and thus increase the likelihood that crime is seen as a possible action alternative, regardless of the presence or absence of a moral conflict. As soon as crime is considered for action, perceptions of deterrence may affect behavioral choice.⁵ This simpler view is backed by existing research. Brauer and Tittle’s (2017) investigation of the moral filtering of action alternatives reveals purely additive effects of personal morality and setting morality on the perception of violence as a possible response to provocation. The observed “absence of (...) interactions between personal and contextual morality in models predicting crime contemplation” (Brauer & Tittle, 2017, p. 840) points toward independent

explanatory contributions of both elements of the moral filter. An empirical examination of the principle of the conditional relevance of control (Schepers & Reinecke, 2018) demonstrates that perceived sanction risk is most predictive of adolescent offending among youths characterized by both weak personal morals and high levels of delinquent peer association—a combination for which the principle of moral correspondence posits a complete irrelevance of control. Finally, a few studies (Hirtenlehner, 2019; Hirtenlehner & Bacher, 2017) found that the magnitude of a deterrent effect is contingent on the level of exposure to delinquent peers, with perceived sanction certainty being more consequential for adolescents who have a greater number of delinquent friends.

Taken together, these findings suggest that both strong personal morals and a crime-discouraging moral context may prevent crime from entering the range of the contemplated action alternatives. From SAT, we borrow the insight that both the moral rules of the person and the moral norms of the setting constitute important components of the moral filter and that an individual must first see crime as a justifiable option before external and internal controls can affect its choice. However, in line with the observations of Brauer and Tittle (2017), we deviate from the tenets of SAT by assuming that personal and setting morality may operate additively to influence the perception of criminal action alternatives. A weakness of one of these moral forces may suffice to let crime enter the set of the considered response options.

Inspired by evidence that external and internal control tend to substitute for one another (Hirtenlehner & Mesko, 2019), we furthermore think that both outer and inner controls become influential as soon as a permeable moral filter enables the perception of crime as a viable action alternative. Hence, we do not agree with the proposition that the impact of deterrence is limited to the combination of weak personal and strong contextual morality. A result of this line of reasoning is the possibility of a two-way interaction between the moral context and the effectiveness of deterrence, whose examination certainly necessitates making adjustments for the actor's own moral attitudes.

According to our interpretation of SAT, the moral filter constitutes the pivotal mechanism by which the moral views of an adolescent's best friends affect the significance of deterrence. The presence of close friends certainly alters the moral context of a setting in which action decisions are made. This applies to their physical and psychological presence: Both influence the perception of action alternatives in a similar way (Hardie, 2019).⁶ Psychological presence counts especially under conditions of physical absence. The presence of close friends with a positive attitude toward offending in a setting—even when that presence is only imaginary—increases the likelihood of crime being seen as an acceptable action alternative, which in turn establishes a salience of deterrence. Deterrence perceptions are not always relevant, but they become important as soon as a weakened moral filter enables the consideration of crime for action.

Prior Research

The moral context is partially shaped by the law-relevant attitudes of other persons present in the setting (Wikström, 2010). Youth research has established that young people spend much time in the company of their friends (Warr, 2002; Wikström et al., 2012). This certainly has consequences for the moral nature of the action settings in which they participate at regular times. Since adolescents tend to socialize a lot with their peers, the perceived stance of their friends toward criminal behavior will often form one important part of the moral surroundings in which adolescents are faced with situational temptations or provocations to offend and in which they have to decide whether or not to break the law.

Despite the significance of close friends' moral views regarding crime, previous research addressing the interaction of contextual morality and the effectiveness of deterrence has neglected the role of best friends' law-relevant attitudes and instead focused on measures of peer offending. The

interplay of exposure to peer delinquency and adolescents' responsiveness to deterrence has been the subject of a small number of analyses.

The first inquiry that shed light on the interaction of adolescents' sanction certainty perceptions and their peer delinquency estimates (Matthews & Agnew, 2008) utilized longitudinal data from the U.S.-American "Youths and Deterrence Survey" (Paternoster, 2001). The authors demonstrated for a sample of 1,600 adolescents from South Carolina that the impact of perceived sanction risk is conditioned by perceived peer delinquency but with perceived risk having a larger effect when association with delinquent peers is low. In brief, deterrence works best for youths who are not involved with delinquent age-mates. The absence of deterrent effects among adolescents with numerous delinquent friends was explained by pointing out that individuals who socialize with crime-affine peers have higher benefits to gain from crime, are more likely to be rewarded for criminal conduct, and must fear to be socially punished if they refrain from crime. In the company of crime-prone friends, adolescents may exhibit a greater taste for risk, lower their sanction certainty estimates, and give less thought to the detrimental consequences of their behavior. Furthermore, the informal costs associated with detection may be lower for those with many delinquent peers.

Nonetheless, despite its merits, Matthews and Agnew's study was criticized in methodological terms (Hirtenlehner, 2019). The authors relied on estimates of product term parameters obtained from negative binomial regression models and comparisons of conditional slope parameters across subsamples (also gained from count data models) to determine the direction of the interaction. Both strategies may provide biased results, as will be outlined in the Method section of this article.

A subsequent inquiry that used four sweeps of the "Peterborough Adolescent and Young Adult Development Study" (Wikström et al., 2012) to examine the interplay of sanction certainty and peer delinquency perceptions came to opposite conclusions (Hirtenlehner, 2019). Lagged linear regression models adjusted for the nonnormality of the crime frequency measure were estimated for 700 adolescents from an English city. The Lubinski and Humphreys (1990) correction—the addition of the squared terms of the predictor variables involved in the interaction to the model equation—was applied to make sure no spurious interaction is reported. The findings show that the deterrent effect of perceived sanction risk rises with the number of delinquent peers. Larger sanction risk effects among adolescents with many delinquent friends are consistent with the notion that deterrence is particularly important when individuals seriously consider engaging in acts of crime.

Hirtenlehner and Bacher's (2017) Austrian study differs from the two works described above in several ways: It has a cross-sectional design, concentrates on adolescent shoplifting activity, and draws on a direct or peer-reported measure of classmates' delinquency. Linear multilevel analyses with robust standard errors were conducted for 3,000 adolescents aged between 13 and 15 years. The results revealed that perceived sanction certainty is more closely associated with log-transformed individual shoplifting frequency in school classes with a high proportion of active shoplifters. A significant cross-level interaction according to which personal sanction risk estimates are more predictive of shoplifting in contextual units characterized by ample exposure to delinquent peers suggests that deterrence affects offending predominately when age-mates are supportive of criminal behavior.

A cross-sectional study of adolescents from Germany (Schepers & Reinecke, 2018) analyzed the size of conditional control effects for different combinations of personal morality and perceived peer delinquency. The authors found that young people's sanction certainty perceptions achieve their greatest explanatory power among adolescents characterized by a combination of weak personal morality and high levels of perceived peer delinquency.

Taken together, the majority of the conducted analyses suggest that the deterrent effect of perceived sanction risk is larger for adolescents who have a greater number of delinquent friends.

Present Study

The current study takes up the idea of differential deterrability and asks whether the moral makeup of young people's action settings moderates the impact of adolescents' sanction certainty perceptions. Inspired by the insight that controls are necessary especially when people are "in the market for (...) criminal offenses" (Apel & Nagin, 2017, p. 128), we hypothesize that the deterrent effect of perceived sanction risk becomes greater when exposure to criminogenic moral contexts increases. The underlying rationale is that a crime-conducive moral context (the confrontation with crime-encouraging social norms in a setting at the time of decision-making) weakens the moral filter, consequently rendering individuals more likely to perceive crime as a viable action alternative (Wikström et al., 2012). Only when the moral filter fails to exclude crime from the set of the contemplated action alternatives, deterrence variables come into play as a powerful line of defense against criminal behavior (Brauer & Tittle, 2017). Deterrence is assumed to be less relevant in cases in which individuals do not see crime as a justifiable response to a given motivation.

To test the hypothesis that sanction certainty effects are larger for adolescents who are faced with crime-facilitating moral contexts, we draw on data from the first two waves of the "Youths and Deterrence Survey" (Paternoster, 2001). Matthews and Agnew (2008) already used this longitudinal student survey to examine the interaction of perceived sanction certainty and perceptions of peer delinquency. However, the "Youths and Deterrence Survey" has still more to offer: It contains a question battery tapping into respondents' assessments of their best friends' moral beliefs regarding criminal activity. From our perspective, these items are more suited to capture the moral context of action young people are often exposed to than their ratings of their friends' actual behavior.

According to Wikström (2010, p. 222), "a measure of the strength of a moral rule that applies to a setting is the degree to which it is shared (cognitively and emotionally) by those taking part in the setting." Although adolescents may infer peers' attitudes from observations of their behavior, the conceptions of close friends about what constitutes acceptable behavior in concrete circumstances will also be passed on in verbal communication (Akers, 1998; Sutherland, 1956) and may be salient even when these individuals are physically absent (Hardie, 2019). It is the knowledge of best friends' assessment of criminal activity that provides information about the moral nature of the immediate environment in which action decisions are made. Since close friends are often physically or at least psychologically present in young people's action settings, their opinion about criminal offenses—as perceived by the actor—forms a key element of the moral contexts youths come upon. Put differently: As young people spend plenty of time in the company of peers (Warr, 2002; Wikström et al., 2012), the moral values of their friends may be regarded as indicative of the moral contexts they encounter.⁷ Thereby peer attitudes constitute a more accurate measure of the moral norms pervading a setting than peer behavior. Exemplarily for the case of crime-affine friends: Although these people may carry crime-conducive views around with them when entering various settings, they will nevertheless refrain from perpetrating acts of crime in most of these settings for most of the time. The perceived moral beliefs of close friends are also better suited to capture the psychological presence of significant others at the point of action and less contaminated by jointly committed offenses (where the respondent may have been the instigator and driving force).

Aside from determining which moral norms apply to a setting, best friends' stance toward crime may have additional implications for the significance of deterrence (Hirtenlehner, 2019). In the presence of peers who tolerate, advocate, or encourage criminal activity, offending becomes easier and more rewarding. Friends who welcome criminal conduct may develop ideas for crime, point out opportunities for crime, or actively support the perpetration of crime. Among associates who approve of offending, acts of crime may yield a wide range of pleasant consequences. "The symbolic rewards of enhanced status, reputation, and respect, for example, may be acquired through delinquent behavior especially when the audience appreciates this performance" (Hirtenlehner, 2019,

p. 367). All this suggests that adolescents who frequently associate with friends supportive of criminal activity will more often be tempted to consider engaging in criminal behavior. The risk of being punished may then become significant for holding these individuals back. In brief, deterrence (perceptions) may be most consequential for those who are, due to their affiliation with friends exhibiting a positive attitude toward crime, located at the verge of criminal involvement. When close friends approve of offending, perceived sanction risk may have a greater effect on adolescents' level of criminal activity.

Method

Data

The present inquiry rests upon a secondary analysis of the first two sweeps of the "Youths and Deterrence Survey" (Paternoster, 2001), a longitudinal survey conducted in nine high schools in the Columbia area of South Carolina. The schools were purposively selected to include urban, suburban, and rural parts of the region and to be representative of the schools and the pupils in the area. In these schools, all students attending a traditional English class were interviewed at the start of their 10th, 11th, and 12th grade years.⁸ The first survey wave took place in fall 1979, the others followed with lag periods of 1 year each. Participants were generally (78%) aged 15 years when they entered the study.

In total, 2,703 students participated in the first and 2,258 in the second sweep of the survey. This analysis concentrates on the 1,625 students who took part in both Waves 1 and 2; 49% of them are male and 85% are White. Matthews and Agnew (2008: 98 f.) give descriptive statistics for this population. As reported by Pogarsky and colleagues (2004), those who participated in both waves do not differ significantly from all respondents of Sweep 1 in terms of the familiar predictors of criminal involvement.

Measures

Criminal activity. Following Matthews and Agnew's (2008) example, three types of crime and one status offense were examined separately: criminal damage (vandalism), shoplifting, using marijuana, and drinking liquor. Respondents were asked how many times they had committed each type of rule-breaking in the year before the second survey round.⁹ Offense-specific analyses of the resulting crime frequency measures were conducted because both the moral assessment of these transgressions and the detection risks associated with them may vary tremendously across the different infringements (Paternoster, 1986).

Perceived sanction risk. Perceived sanction certainty was measured in terms of the perceived likelihood of getting caught by the police when committing the four scrutinized types of rule-breaking. Five response options between *very likely* and *very unlikely* were provided. Answers were coded in a way that higher values indicate a lower perception of the likelihood of being caught.

Moral context. Best friends' moral beliefs regarding criminal activity were taken as a measure of the moral context of action. Respondents were asked "How wrong do your best friends think it is to (...)?" commit the four inspected types of rule-breaking. Answers were to be graded on a 5-category response scale between *always wrong* and *never wrong*, with higher values denoting a more crime-encouraging moral surrounding (i.e., more peer support for offending).

Personal morals. To determine respondents' personal moral beliefs, the students were asked to indicate how wrong it is in their eyes to commit the four crimes in question. For each offense, five

Table 1. Descriptive Statistics.

	N	Mean	Standard Deviation	Minimum	Maximum
Crime frequency for					
Vandalism	1,571	0.95	3.27	0	25
Shoplifting	1,569	1.21	5.95	0	60
Using marijuana	1,532	6.03	15.67	0	60
Drinking liquor	1,509	16.82	19.93	0	50
Best friends' moral evaluation of					
Vandalism	1,601	1.88	1.00	1	5
Shoplifting	1,605	1.74	1.01	1	5
Using marijuana	1,603	2.01	1.38	1	5
Drinking liquor	1,604	3.00	1.40	1	5
Perceived sanction risk for					
Vandalism	1,587	3.21	1.05	1	5
Shoplifting	1,592	3.01	1.06	1	5
Using marijuana	1,580	3.35	1.24	1	5
Drinking liquor	1,587	3.85	1.04	1	5
Personal moral evaluation of					
Vandalism	1,600	1.37	0.66	1	5
Shoplifting	1,599	1.31	0.63	1	5
Using marijuana	1,600	1.53	1.02	1	5
Drinking liquor	1,598	2.23	1.19	1	5
Control variables					
Parental supervision	1,610	3.81	1.40	2	8
Attachment to mother	1,595	0.16	2.23	-7.43	+3.68
Attachment to father	1,555	0.25	2.32	-6.17	+4.04
Attachment to teachers	1,586	0.27	3.12	-11.51	+8.98
Grades	1,622	6.36	1.40	1	9
Receipt of welfare benefits	1,532	0.09	—	0	1
Sex: Male	1,625	0.49	—	0	1
Race: Black	1,620	0.14	—	0	1
Race: Other non-White	1,620	0.01	—	0	1
Age	1,623	15.14	0.52	13	19

response options between *always wrong* and *never wrong* were presented. Answers were coded so that higher values describe a more crime-conductive personal morality.

Other control variables were built in line with Matthews and Agnew (2008). A measure of *parental supervision* was constructed by adding up 2 items, drawing on whether the parents know where the children are and who is with them when they spend time outside the home (Cronbach's $\alpha = .81$). *Attachment to mother* was operationalized as summated index of 3 items, depicting how close the respondent feels to the mother, how much he or she wants to be like the mother, and how important the approval of the mother is for him or her ($\alpha = .66$). *Attachment to father* is operationalized as sum score comprising the same 3 items, but this time with reference to the father ($\alpha = .74$). *Attachment to teachers* was measured additively by asking the students whether they feel they can turn to their teachers for advice, whether they like them, whether they feel understood by them, whether they want to be like them, and how important their teacher's approval is for them ($\alpha = .66$). Further controls include the student's *grades* (from "mostly As" to "mostly Fs," with higher values indicating better grades), whether the respondent's family had received any sort of *welfare benefits* in the past 3 years, and the individual's *sex*, *race*, and *age*.

Table 1 presents descriptive statistics for the variables under study.

Analytic Strategy

In technical terms, the employed response variables—offense-specific crime frequencies—represent count variables. Negative binomial regression has been established as appropriate statistical procedure for modeling skewed count variables with overdispersion (Hilbe, 2011). LaGrange multiplier tests indicate significant overdispersion of all four investigated infringements ($p \leq .001$). As a consequence, all statistical analyses were conducted on the basis of negative binomial models.

However, the interpretation of interactions is more complex in nonlinear models than in a linear framework. Interaction is inevitably introduced into nonlinear models by the link function (a logarithmic one in the case of negative binomial regression) which implies that the partial effect of a given predictor will necessarily depend on the levels of all independent variables included in the equation. Notwithstanding, to capture the complete interplay of two predictors involved in an interaction relationship, it is necessary to additionally incorporate their product term on the side of the regressors. The presence of both a model inherent interaction and a product term interaction complicates the interpretation of the interplay of two (or more) explanatory variables. Both forms of interaction may mutually affect each other (or even cancel each other out), which creates the risk of producing methodological artifacts when focusing solely on the sign and significance of the slope parameter of the multiplicative term. All this suggests that in a negative binomial framework, the product term coefficient may be a misleading estimate of the overall interplay of two predictors (Berry et al., 2010; Bowen, 2012; Karaca-Mandic et al., 2012; Tsai & Gill, 2013).

Comparing regression weights across groups is impeded by the fact that the scaling of the regression coefficients is dependent on the goodness of the model and therewith on the level of unobserved heterogeneity. Negative binomial regression coefficients can only be compared when the influence of all omitted third variables (even those that are uncorrelated with the included predictors) is exactly the same for all subgroups—an assumption that will seldom be fulfilled (Allison, 1999; Mood, 2010). Consequently, applying statistical tests for the equality of regression coefficients to subgroup-specific slope parameters is not advisable in a nonlinear framework.

To answer the question whether and how the effect of perceived sanction certainty changes when best friends' moral support for offending increases, we relied on comparisons of conditional marginal effects (Karaca-Mandic et al., 2012; Mood, 2010; Williams, 2012). Such a marginal effect relates a continuous independent variable to the predicted change of a dependent variable, given specific values of other explanatory factors (Hilbe, 2011). In the case of a negative binomial regression, it expresses how the value of the count response changes with a one-unit increase in the predictor variable, with other regressors held at fixed values. Here the marginal effect of (the focal variable) perceived sanction risk was calculated for different levels of (the moderator variable) peer support for offending. Conditional marginal sanction risk effects were computed at three values of best friends' moral beliefs: one standard deviation below the mean, the arithmetic mean, and one standard deviation above the mean. Then the *Z* test proposed by Paternoster and colleagues (1998) was employed to examine whether these conditional marginal effects differ significantly from each other.

To recap, the investigated overall interaction effect is the difference in the conditional marginal effects of perceived sanction certainty at different levels of moral peer support for criminal activity. Accordingly, the employed analytic strategy involves estimating negative binomial regression models, computing the conditional marginal sanction risk effects at varying values of best friends' moral beliefs, then taking the difference of the partial effects and testing these differences for significance.

All regression models were fitted with Stata 14. Predictor variables involved in interactions were *z*-standardized before computing the corresponding multiplicative terms (Aiken & West, 1991). The marginal effects at representative values were computed as partial derivative (dy/dx) from the negative binomial model using Stata's margins command (Williams, 2012).

On the Necessity of Controlling for Similarity of Personal and Friends' Moral Beliefs

One of the main challenges of the current research endeavor results from the necessity of dealing with a potential confounding of personal morality and close friends' morality. A whole host of reasons suggest that respondents' perceptions of their best friends' moral beliefs regarding crime resemble their own moral convictions.

The homophily principle states that people tend to make friends with people who are similar to themselves (Warr, 2002, 2009). Self-selection into friendships implies that crime-prone individuals frequently acquire crime-prone friends or, put differently, that individuals with similar views and interests tend to seek each other out (Costello & Hope, 2016). It follows that adolescents who hold crime-encouraging moral beliefs will have friends who also possess crime-facilitating moral attitudes.

Methodological considerations reveal that respondent-generated perceptual measures of peer attitudes may be contaminated by participants' own moral stance (Hoeben et al., 2016). Same-source bias appears in the form of projection, which means that adolescents may impute their own attitudes to their friends and therefore provide distorted estimates of their close friends' moral evaluations of criminal activity (Warr, 2002, 2009). An indirect measure of friends' conceptions of what is acceptable behavior may thus (at least to some extent) depict the respondents' own moral beliefs.

Furthermore, omnipresent reciprocal socialization between close friends implies that they are subject to a mutual alignment of their moral attitudes (Akers, 1998; Costello & Hope, 2016). This sort of peer influence promotes attitudinal change in the sense that individuals reconcile their views with the opinion of significant others. Additionally, close friends' law-relevant moral beliefs may become more similar over time because they share important other causal factors (e.g., attend the same school or live in the same neighborhood).

Respondents' own moral beliefs and their perceptions of their friends' moral convictions are indeed closely correlated. A certain consistency of personal and peer assessments of criminal conduct is expressed here in offense-specific bivariate product-moment correlations between .41 and .61. These statistical associations indicate that, without special adjustment, observed peer-deterrence interactions may in fact reflect an interaction between personal morality and perceived sanction risk.

In order to control for selection, projection and alignment effects, all the regression models estimated in this work contain measures of personal morals and their interaction with perceived sanction certainty (first-order and multiplicative terms) as covariates. This means that the conducted negative binomial regression analyses include two multiplicative terms: one representing the pivotal peer-deterrence interaction and one depicting the interplay of personal morality and perceived sanction risk. Adjusting the models for the interplay of personal morals and deterrence ensures that demonstrated interactions of perceived sanction risk and best friends' attitudes toward crime are not spurious.¹⁰

Results

Following Matthews and Agnew's (2008) example, we conduct offense-specific longitudinal analyses. Crime frequency measures are taken from the second survey sweep. The independent variables stem from the first survey wave. The lagged nature of the estimated models serves as a safeguard against endogeneity: It ensures that indeed deterrent and not experiential effects are being studied (see Hirtenlehner & Wikström, 2017, for a description of the simultaneity problem and its implications).

Table 2. Predictors of Offending (Lagged Negative Binomial Regression Models).

	Vandalism		Shoplifting		Using Marijuana		Drinking Liquor	
	B	p	B	p	B	p	B	p
Crime-encouraging moral context	+0.33	.001	+0.36	.006	+0.66	.000	+0.41	.000
Low perceived sanction risk	+0.21	.017	+0.14	.261	+0.37	.000	+0.08	.086
Crime-encouraging personal morals	+0.24	.003	+0.47	.000	+0.39	.000	+0.25	.000
Low parental supervision	+0.29	.000	+0.07	.430	+0.24	.001	+0.09	.015
High attachment to mother	+0.13	.001	+0.13	.028	-0.00	.912	+0.04	.021
High attachment to father	-0.01	.886	-0.11	.090	-0.02	.708	-0.02	.374
High attachment to teachers	+0.02	.475	-0.02	.531	+0.05	.069	+0.00	.791
Good grades	-0.16	.018	-0.13	.125	-0.51	.000	-0.11	.001
Receipt of welfare benefits	-0.36	.208	-0.38	.338	-0.13	.658	-0.05	.719
Sex: Male	+1.27	.000	+1.24	.000	+0.22	.235	+0.09	.300
Race: Black	-0.44	.086	-0.31	.393	-0.14	.612	-0.73	.000
Race: Other non-White	-0.83	.298	+1.17	.179	-1.05	.172	-0.15	.692
Age	-0.36	.028	-0.17	.427	-0.07	.686	+0.03	.708
Overall model	$n = 1,344;$ $\chi^2 = 190.84;$ $p = .000$		$n = 1,346;$ $\chi^2 = 106.04;$ $p = .000$		$n = 1,315;$ $\chi^2 = 224.85;$ $p = .000$		$n = 1,296;$ $\chi^2 = 267.02;$ $p = .000$	

Note. B = regression slope; p = error probability; n = sample size.

Moral Forces and Deterrence Perceptions as Predictors of Offending

Before we examine the interaction of perceived sanction risk and best friends' moral evaluation of criminal activity, it makes sense to inspect the unconditional effects of both concepts. Estimating crime-specific lagged negative binomial regression models including a series of control variables yields the results depicted in Table 2. First, the findings reveal significant main effects of best friends' stance toward criminal behavior. Strong moral support for offending from close friends increases young people's crime frequency, net of their personal assessment of the acceptability of criminal conduct. Certainly, personal morality also represents a robust predictor of criminal involvement. The more a respondent's own moral beliefs encourage offending, the higher is his or her self-reported crime frequency. Since both best friends' moral attitudes and personal morals were introduced in z-standardized form into the regression equations, their effects can be compared. Contrasting the effect sizes suggests that the former is at least as important or predictive as the latter: For three infringements, the regression coefficient of best friends' moral beliefs exceeds the one of personal morals.

In the overall sample, the evidence for a deterrent impact of young people's sanction certainty perceptions is decidedly mixed. The sign of the relevant slope parameters indicates that lower risk perceptions may increase crime involvement, but the relationship achieves significance only for two out of four infringements. To what extent the size of the sanction risk effect depends on the level of peer support for offending and whether deterrence is effective at least in the subgroup of adolescents with crime-affine friends will be tested in the next section.

The Interplay of Deterrence and the Moral Context

To examine whether the partial effect of young people's sanction certainty perceptions is conditional on their best friends' moral assessment of criminal conduct, we draw on comparisons of marginal effects obtained from lagged negative binomial models. For this purpose, the regression models

Table 3. Conditional Marginal Effects of Perceived Risk on Vandalism Frequency.

Moral Peer Support for Offending	ME	Z	p
Low ($M - 1\ SD$)	+0.13	2.24	.025
Medium (M)	+0.20	2.42	.016
High ($M + 1\ SD$)	+0.29	2.46	.014
Effect differences	Contrast	Z	p
Low – medium	+0.07	2.34	.019
Medium – high	+0.09	2.12	.034
Low – high	+0.16	2.21	.027

Note. ME = marginal effect; Z = Z statistic; p = error probability.

Table 4. Conditional Marginal Effects of Perceived Risk on Shoplifting Frequency.

Moral Peer Support for Offending	ME	Z	p
Low ($M - 1\ SD$)	+0.08	0.91	.363
Medium (M)	+0.12	0.94	.347
High ($M + 1\ SD$)	+0.16	0.96	.338
Effect differences	Contrast	Z	p
Low – medium	+0.04	0.95	.342
Medium – high	+0.04	0.93	.355
Low – high	+0.08	0.94	.348

ME = marginal effect; Z = Z statistic; p = error probability.

depicted in Table 2 were expanded with two product term variables: one representing the interaction of friends' moral beliefs with perceived sanction risk and one capturing the interplay of personal morality and perceived sanction certainty. The results of the reestimations can be seen in Appendix Table A1. From these models, conditional marginal sanction risk effects were derived, whose comparison provides the basis for determining moderation relationships.

Vandalism. Our interaction analysis begins with a test of the interplay of deterrence and best friends' moral evaluation of criminal activity in governing young people's vandalism delinquency. Table 3 reports the marginal effects of perceived sanction risk at different levels of moral context criminogeneity. Here and below, the marginal effects of the focal variable "perceived sanction certainty" were calculated at three values of the moderator variable: the mean of best friends' moral beliefs about the investigated infringement, one standard deviation below the mean, and one standard deviation above the mean.

A comparison of the displayed conditional marginal effects reveals that sanction risk effects increase as the moral context becomes more crime-affine. It can be clearly seen that the marginal effects of perceived sanction risk are greater among respondents whose friends tolerate or advocate damaging other people's property. All effect differences are significant, indicating firm support for the examined interaction hypothesis.

Shoplifting. Regarding adolescent shoplifting activity, the results are less conclusive (Table 4). Comparing solely the size of the marginal effects of perceived sanction risk on theft frequency at different levels of moral context, criminogeneity creates the impression that deterrence becomes more important when one's best friends agree with stealing from stores. However, neither the effect differences nor the individual marginal effects are significant. Therefore, although the direction of the effect

Table 5. Conditional Marginal Effects of Perceived Risk on the Frequency of Using Marijuana.

Moral Peer Support for Offending	ME	Z	p
Low ($M - 1\ SD$)	+0.72	1.85	.064
Medium (M)	+1.52	2.13	.033
High ($M + 1\ SD$)	+3.18	2.32	.020
Effect differences	Contrast	Z	p
Low – medium	+0.80	2.31	.021
Medium – high	+1.66	2.31	.021
Low – high	+2.46	2.34	.019

ME = marginal effect; Z = Z statistic; p = error probability.

Table 6. Conditional Marginal Effects of Perceived Risk on the Frequency of Drinking Liquor.

Moral Peer Support for Offending	ME	Z	p
Low ($M - 1\ SD$)	+0.39	0.71	.479
Medium (M)	+0.59	0.71	.476
High ($M + 1\ SD$)	+0.89	0.72	.473
Effect differences	Contrast	Z	p
Low – medium	+0.20	0.72	.470
Medium – high	+0.30	0.72	.469
Low – high	+0.50	0.72	.469

ME = marginal effect; Z = Z statistic; p = error probability.

development conforms to the theoretical expectations, we may not interpret these findings as generalizable support for the investigated interaction hypothesis.

Marijuana consumption. The results regarding the frequency of using marijuana resemble the ones obtained for vandalism. Here, once again significant effect differences can be found (Table 5). The impact of perceived sanction risk on marijuana consumption increases as the moral context becomes more drug-affine. Sanction certainty effects are largest for youths whose best friends support using marijuana.¹¹ Comparing the conditional marginal effects yields significant effect differentials, indicating an interplay of deterrence and the moral context that accords well with the proposition guiding the present research.

Alcohol use. The only status offense we use as test case is drinking liquor (Table 6). Here, the marginal effects of perceived sanction risk show a tendency to rise as best friends become more permissive toward using alcohol. However, neither the effect differences nor the individual marginal effects are significant. Hence, although the direction of the observed parameter development corresponds with the theoretical expectations, the failure to overcome conventional significance thresholds challenges the generalizability of the findings. However, it must be mentioned that the conditional sanction risk effects vary significantly ($p < .02$) when all covariates are removed from the underlying negative binomial model.¹²

Sensitivity Analyses

Interferences with personal morality. To minimize the risk of mingling interactions of deterrence with personal morality and contextual morality, the respondent's own morality and the product of

perceived sanction certainty and personal moral beliefs were introduced as covariates into the model equations. However, in view of the importance of an individual's own moral rules for the significance of deterrence (Wikström, 2010), additional sensitivity analyses seem warranted.

Holding personal morality constant by replicating the analyses reported above only for individuals who think that the investigated offense is "always wrong" leads to substantively identical conclusions. Although owing to considerable reductions in sample size ($n = 473\text{--}1,038$) the conditional marginal effects of perceived sanction risk cease to differ significantly, the pattern of the coefficient variation remains the same: For each offense, sanction risk effects increase in size as best friends become more supportive of criminal activity. This observation lends additional credence to the notion that the revealed interplay of deterrence and the moral context is not spurious in the sense of actually reflecting an interaction between personal morals and deterrability.

An alternative approach to controlling for interferences with personal morality builds on the idea that discrepancies between an individual's own morality and the moral environment may mask or superimpose the interplay of the moral norms prevailing in a setting with adolescents' responsiveness to deterrence. Since we employ best friends' moral beliefs as a measure of the moral context of action, it may not seem wise to remove every overlap with personal morality from its effect size. We are interested in the question how the absolute moral context shapes the deterrent impact of perceived sanction risk, not how moral incongruences between young people and their friends affect their deterrability. Therefore, it could make sense to control solely for deviations of personal morals from best friends' moral rules. Hence, in another sensitivity analysis, we regressed respondents' personal assessments of the wrongfulness of committing certain acts of rule-breaking on best friends' moral beliefs regarding the same type of behavior and used the residuals of the fitted ordinary least squares models as estimates of the part of personal morality that differs from close friends' moral views. Introducing these residuals (instead of the raw measures of personal morals and their product with perceived sanction risk) as covariates in the reported negative binomial models does not alter the findings. Comparing the conditional marginal effects of perceived sanction certainty on offending at different levels of moral peer support for criminal activity indicates rising deterrent effects when friends become more crime-affine. These effect differences are again significant for two out of four offenses—namely vandalism ($p < .03$) and marijuana use ($p < .02$).¹³

Since the calculated residual variables capture the deviation of personal from contextual morality, they can be interpreted as a generalized measure of the level of incongruent rule-guidance the respondents are faced with. Against this backdrop, the obtained findings indicate that deterrence and close friends' moral attitudes interact net of the extent of moral conflict young people have to deal with. Evidence of this kind squares with our conceptualization of the interrelationships between setting morality, the perception of action alternatives and the relevance of deterrence.

Contamination by peer offending. Ample evidence shows that the more delinquent friends an adolescent has, the more likely he or she is to engage in criminal conduct (Hoeben et al., 2016; Pratt et al., 2010). This raises the question whether adolescent offending is a consequence of what peers think or what they do. Existing research demonstrates independent effects of both peer attitudes and peer behavior on respondents' self-reported delinquency (Megens & Weerman, 2012; Warr & Stafford, 1991).

Our argument regarding the role of the moral context in the moral filtering of action alternatives stresses the significance of peer attitudes, which is why we based our analyses on best friends' moral beliefs. This, of course, does not rule out the possibility of additional peer influence. Involvement with delinquent friends may foster adolescent offending via an enhancement of situational inducements, criminal opportunities, or group-dynamic processes (Hirtenlehner et al., 2015). Peer offending certainly depicts more than just contextual morality even though young people tend to deduce the attitudes of their friends partly from their friends' behavior.

To ensure that other forms of peer influence do not contaminate our results, robustness checks attempting to control for possible interferences with peer behavior were conducted. Since the respondents' perceptions of their best friends' moral beliefs and their peers' level of criminal activity are highly correlated (up to .70), adding perceived peer delinquency as another covariate is a problematic endeavor. It certainly reduces the reliability and stability of the findings of the model estimations—even when the variance inflation factors remain below 2.5.¹⁴ Nevertheless, expanding the fitted negative binomial models with perceived peer delinquency as additional predictor before comparing the conditional sanction risk effects across different levels of moral peer support for offending does not fundamentally alter the results. For all investigated types of rule-breaking apart from drinking liquor effect differentials in the predicted direction emerge, which are significant by tendency ($p < .10$) in the case of vandalism and consuming marijuana. As regard the use of alcohol, the calculated conditional deterrent effects cease to vary with the pertinent moral beliefs of close friends.

Cross-sectional analyses. Deterrence research is faced with the necessity of separating deterrent effects (the impact of perceived sanction risk on subsequent offending) from experiential effects (the impact of previous criminal activity on later perceptions of sanction risk; Hirtenlehner & Wikström, 2017). Longitudinal analyses represent a common strategy to disentangle the two and establish the required causal ordering of the involved concepts. However, it has also been argued that situational mechanisms are best tested with cross-sectional data (Wikström et al., 2018, pp. 15 f). Since crime causation is a “question of minutes rather than years,” it may be preferable to measure causes and outcome as concurrently as possible. Therefore, we reestimated all crime-specific regression models as cross-sectional analysis with offending reported in Wave 1 as response variable. Calculating and comparing marginal effects from these cross-sectional models provides even more support for the research-guiding hypothesis. Now for all four types of rule-breaking significant effect differences emerge according to which perceived sanction risk is most predictive of offending among adolescents whose best friends approve of criminal activity. Figure 1 presents the relevant conditional marginal effects and the significance of their differences.

Overall Picture

The hypothesis guiding this research submits that sanction risk effects are greater when youths are exposed to close friends who encourage criminal conduct via a positive stance toward crime. Comparing the conditional marginal effects of perceived sanction risk at different levels of best friends' moral attitudes toward offending obtained from four crime-specific negative binomial regression analyses yields mixed support for the assumed interaction relationship. The common tendency of the findings is clear: The sanction risk effect coefficients increase in size as the moral context becomes more crime-affine. The observable deterrent impact of young people's sanction certainty perceptions is generally larger among adolescents whose best friends encourage criminal activity.

However, in lagged analyses (which control for the endogeneity issue), the effect of differences reach significance only in two of the four cases. For vandalism and marijuana use, our findings indicate significant increases in the magnitude of the observed deterrent effects when best friends' moral beliefs move toward criminogeneity. Figure 2 shows how the marginal effects of an individual's sanction certainty perceptions differ across the range of his or her best friends' moral attitudes regarding damaging other people's property and consuming marijuana. Conditional sanction risk effects are displayed on the y -axis, differentiated by multiple representative values of moral context criminogeneity. It is clearly apparent that perceived sanction risk unfolds a greater impact on subsequent offending at higher levels of moral peer support for criminal behavior.

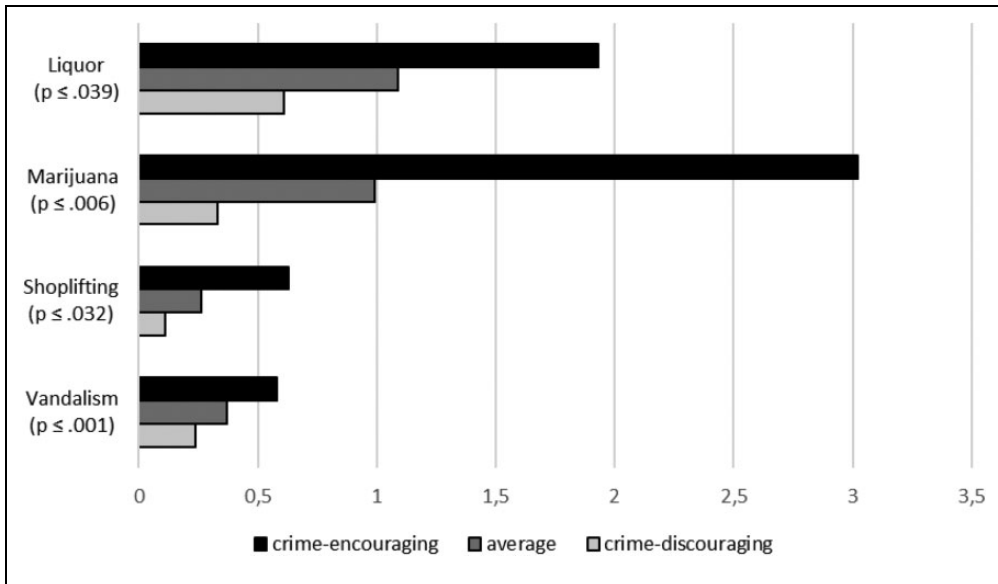


Figure 1. Marginal effects of perceived sanction risk at different levels of moral context criminogeneity differentiated by type of crime (cross-sectional analyses).

Contrastingly, for shoplifting and drinking liquor, the revealed effect differentials cannot withstand significance testing. Despite a tendency toward increased effect sizes at representative values indicating a greater crime-permissiveness of one's best friends, the marginal effects of perceived sanction certainty on subsequent offending do not vary significantly as a function of the moral surroundings when it comes to predicting theft or alcohol use.

Conclusions

This study examined the question whether the significance of deterrence is conditioned by the moral makeup of young people's action settings, in detail by the crime-relevant moral attitudes of close friends. Inspired by reflections on the significance of the moral filter for the perception of action alternatives (Wikström, 2010; Wikström et al., 2012), the role of delinquent peers in creating opportunities and incentives for criminal conduct (Hirtenlehner, 2019; Hoeben et al., 2016), and individual differences in responsiveness to deterrence according to which sanction threats are most effective when people are "in the market for (...) criminal offenses" (Apel & Nagin, 2017, p. 128), we posited that perceived sanction certainty has a greater effect on adolescent offending when youths are exposed to close friends who tolerate or advocate criminal behavior.

Using best friends' moral beliefs regarding criminal activity as a measure of the nature of the moral context at the point of action, we found mixed support for the research-guiding hypothesis in a reanalysis of a longitudinal student survey from South Carolina (Paternoster, 2001). Comparing the conditional marginal effects of perceived sanction risk on the frequency of four distinct infringements at different levels of moral peer support for offending indicates increasing deterrent effects when close friends become more crime-affine. The effect differences are significant for two of the four offenses. Given the overall pattern of the obtained findings, we are inclined to conclude that perceived sanction certainty exercises a greater effect on the likelihood of criminal behavior when the moral context facilitates criminal activity. Since we adjusted the estimated regression models for respondents' own morality, we presume that a criminogenic moral context—at least in the form of

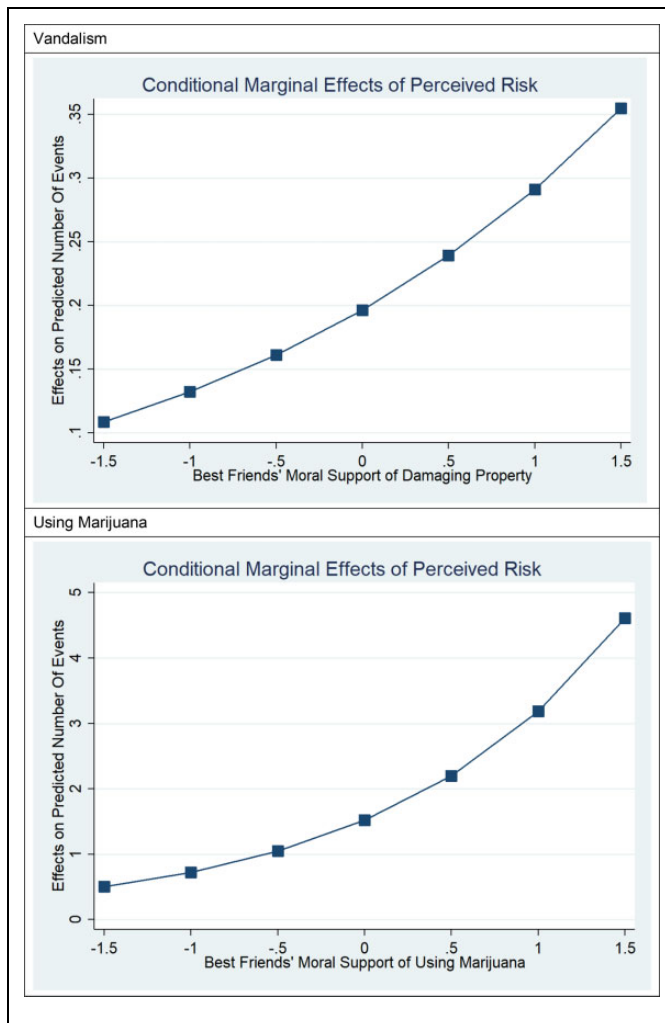


Figure 2. Marginal effects of perceived sanction risk at representative values of moral peer support for criminal activity (longitudinal analyses).

crime-encouraging friends—has an independent tendency to bring sanction risk into play as an efficacious deterrent.

These results are in line with SAT’s moral filter hypothesis which holds that personal morality and the moral rules of the setting govern the perception of crime as a viable action alternative (Wikström, 2010, Wikström, 2014). A functioning moral filter renders crime unthinkable, thus removing it from the set of the considered action alternatives. Only when weak law-consistent personal morals or crime-conducive moral contexts erode the moral filter, criminal action alternatives can be contemplated as a possible response to a particular motivation and deterrence may achieve significance as a powerful regulator of behavior. Adolescents whose best friends advocate offending seem to be more responsive to legal sanction risk, and this elevated deterrability may ground on the fact that they are more likely to be faced with a crime-encouraging moral context at the time of action decisions in which they have crime on the radar and feel tempted to choose it (Hirtenlehner, 2019).

In any case, the results of the present inquiry speak to the usefulness of the concept of differential deterrability (Loughran et al., 2018; Piquero et al., 2011) as a basis for future perceptual deterrence research. The obtained evidence suggests that individuals differ in their responsiveness to sanction risk and that those who are exposed to criminogenic conditions are more prone to be influenced by their sanction certainty perceptions. It seems as if deterrence constitutes a last line of defense against criminal conduct that matters chiefly when individuals are burdened with risk factors for crime. This notion is substantiated by findings according to which external sanction threats are more consequential for individuals with weak personal morality (e.g., Hirtenlehner & Hardie, 2016; Kroneberg et al., 2010; Svensson, 2015) and a poor ability to exercise self-control (e.g., Hirtenlehner et al., 2015; Kroneberg & Schulz, 2018; Wright et al., 2004). The study reported here gives reason to assume that not only individual-level characteristics (people's propensity for crime) but also situational features (the criminogeneity of the moral environment at the point of action) condition the salience of deterrence. Scholars may be well advised to abandon the idea that formal sanction threats affect all people equally and concentrate on the significance of perceived sanction risk among those who carry around a disposition for crime or are faced with criminogenic action surroundings.

Limitations

Of course, the findings of this study should be assessed in light of its methodological strengths and weaknesses. Therefore, some limitations of our work must be acknowledged.

A major shortcoming that needs to be addressed refers to the incomplete capture of the moral context of young people's action settings. The crime-related assessments and beliefs of youth's close friends constitute only one part of the moral makeup of their outer surroundings. Which moral rules dominate in a setting is also shaped by other people present in the immediate environment (e.g., parents, teachers, property owners, sales assistants) and more abstract entities, such as the legal order or religious-confessional value catalogues. Focusing only on ties to peers who express crime-conducive moral rules represents a narrow conceptualization of criminogenic exposure that may restrict the scope of our findings to adolescents and young adults. For these age groups, association with crime-prone peers has been established as a powerful environmental influence (Hoeben et al., 2016; Pratt et al., 2010).

Besides, this study cannot make use of a direct measurement of the peer-created moral context. The underlying "Youths and Deterrence Survey" (Paternoster, 2001) does not tap into the students' best friends' actual evaluation of a selected number of rule-breaking behaviors, it captures only what the respondents think about the moral judgments of their friends. Drawing on indirect measures of peer attitudes may be subject to projection bias and consequently lead to an overestimation of the peer effect and an underestimation of the impact of other predictors (Hoeben et al., 2016). However, relying on a respondent-generated measure of peer attitudes can be defended by pointing out that it is the perceived opinion of close reference persons (as received by the agent) that counts when individuals make behavioral choices.

Previous research has convincingly demonstrated that both peer attitudes and peer behavior affect young people's crime involvement (Megens & Weerman, 2012; Warr & Stafford, 1991). Empirically distinguishing these closely correlated concepts will always be difficult, which may be one of the reasons why most criminological research confines its focus to the significance of peer delinquency. With the objective of broadening the evidence base on the interworking of setting morality and deterrence, the present inquiry prefers friends' beliefs regarding the acceptability of offending to friends' actual behavior as a measure of the moral context of action. Here, it is crucial to note that a few studies analyzing the interaction between peer offending and adolescents' sensitivity to sanction risk provide similar findings (Hirtenlehner, 2019; Hirtenlehner & Bacher, 2017). The fact that these studies follow the same theoretical rationale and specify exposure to peer delinquency as indicator of

the moral context suggests that our observations are not an artifact of the employed operationalization strategy. The aim underlying our work was to assess whether the results obtained in these studies are replicable with a from our view better measure of contextual morality. That notwithstanding, future research incorporating empirically distinct measures of peer attitudes and peer behavior simultaneously—at best on a network-based peer-reported basis—is desperately needed to advance our understanding of the contextual and situational determinants of differential deterrability. It will be interesting to see whether identical interaction patterns emerge under methodologically more rigorous conditions.

Certainly, questions regarding the generalizability of our findings to older age groups, lower social strata, and more serious types of crime arise. The congruency of our results with the interaction dynamics between delinquent peer association and deterrence observed in other studies (Hirtenlehner, 2019; Hirtenlehner & Bacher, 2017; Schepers & Reinecke, 2018) makes a case for the tenability of our conclusions. Nonetheless, whether these findings apply also to population groups characterized by lower (adults of advanced age) or higher (members of the underclass) crime involvement as well as to less common forms of lawbreaking remains an important issue for future research.

A nonnegligible limitation of this study stems from the impossibility of including people's ability to exercise self-control as covariate. Unfortunately, the data set underlying our secondary analysis does not contain a measure of the respondents' level of trait self-control. Previous scholarship has established self-control as a powerful moderator of criminogenic peer effects (Hirtenlehner & Hardie, 2016; Hirtenlehner et al., 2015; Wright et al., 2001). Its neglect admittedly produces the risk of observing spurious interaction relationships between the moral context and the effectiveness of deterrence. However, all reported analyses are corrected for major correlates of participants' capacity for self-control: Parental control (both instrumental and relational), students' grades, and sex were introduced as control variables into the estimated regression models. Ample evidence indicates that low(er) self-control is associated with insufficient parental supervision and affection (Hay & Forrest, 2006; Hope et al., 2003), worse grades (Duckworth & Seligman, 2005; Tangney et al., 2004), and male gender (Burton et al., 1998; LaGrange & Silverman, 1999). Adjusting the analyses for these "proxies" of self-control certainly reduces the risk of reporting a solely spurious interplay of deterrence and best friends' attitudes toward crime. Nevertheless, the absence of a direct control for the ability to exercise self-control and its interaction with the moral context represents a major limitation of the current investigation. Since individuals' sanction risk perceptions are systematically linked to their level of self-control (Hirtenlehner, 2019), future research in this area will be well advised to adjust the analyses for the interplay of setting morality and self-control ability.

Although our argument concerning the moral filtering of action alternatives and its implications for the relevance of deterrence refers to situational mechanisms, the data analyzed here were obtained from a (longitudinal) student survey. Exploring situational processes with data collected at the individual level is a problematic endeavor (Hardie, 2020). The present work utilized generalized person-level measures of key concepts, whose functioning and interworking is certainly situational in nature. Hence, it relies on the auxiliary assumptions that (1) adolescents whose best friends take a positive stance toward crime are more often exposed to a criminogenic moral context when making action decisions, (2) individuals with an elevated sensitivity to deterrence perceive higher levels of sanction risk in the settings they encounter in their everyday life, and (3) respondents' self-reported offenses were committed when they were in the company of their close friends. The strength of the presented findings without doubt rests on the applicability of these assumptions. Analyses of space-time budget data indicating that much adolescent crime is perpetrated in the presence of peers lend credence to the validity of the last auxiliary assumption (Bernasco et al., 2013; Wikström et al., 2012). Notwithstanding this—and although our person-level findings are consistent with results we would expect to see were the relevant situational processes functioning as

conjectured—future research on the interaction of deterrence and the moral context should change the level of analysis from individual to situational. Both hypothetical scenarios and detailed space-time budget analyses may be a promising tool to delve deeper into the situational interplay of exposure to crime-affine friends and perceptions of sanction certainty.

Appendix

Table A1. Lagged Negative Binomial Regression Models With Product Terms.

	Vandalism		Shoplifting		Using Marijuana		Drinking Liquor	
	B	p	B	p	B	p	B	p
Crime-encouraging moral context	+0.39	.000	+0.31	.024	+0.74	.000	+0.41	.000
Low perceived sanction risk	+0.24	.008	+0.12	.344	+0.26	.016	+0.04	.475
Moral Context × Risk Perception	-0.23	.020	+0.19	.117	-0.18	.208	-0.09	.145
Crime-encouraging personal morals	+0.20	.029	+0.47	.000	+0.50	.000	+0.26	.000
Personal Morals × Risk Perception	+0.14	.197	-0.28	.027	-0.22	.140	-0.03	.635
Low parental supervision	+0.30	.000	+0.10	.250	+0.23	.001	+0.08	.024
High attachment to mother	+0.12	.001	+0.12	.051	-0.02	.665	+0.04	.027
High attachment to father	-0.01	.804	-0.10	.104	-0.01	.872	-0.02	.429
High attachment to teachers	+0.02	.506	-0.05	.201	+0.05	.079	+0.00	.821
Good grades	-0.15	.022	-0.11	.192	-0.50	.000	-0.11	.001
Receipt of welfare benefits	-0.45	.120	-0.49	.218	-0.14	.644	-0.07	.613
Sex: Male	+1.20	.000	+1.22	.000	+0.23	.213	+0.10	.256
Race: Black	-0.35	.177	-0.20	.590	-0.21	.459	-0.70	.000
Race: Other non-White	-0.94	.236	+1.10	.202	-0.81	.296	-0.21	.589
Age	-0.31	.057	-0.22	.304	-0.02	.916	+0.05	.532
Overall model	$n = 1,344;$ $\chi^2 = 196.62;$ $p = .000$		$n = 1,346;$ $\chi^2 = 113.37;$ $p = .000$		$n = 1,315;$ $\chi^2 = 231.94;$ $p = .000$		$n = 1,296;$ $\chi^2 = 272.66;$ $p = .000$	

Note. B = regression slope; p = error probability; n = sample size.


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ORCID iD

Helmut Hirtenlehner  <https://orcid.org/0000-0003-3416-0355>

Notes

1. We use the term “moral context” to describe the moral quality of young people’s immediate action settings. Substantively we refer to the moral rules prevailing in the section of the environment an individual can currently experience with his or her senses (Wikström et al., 2012).

2. The negative sign of the experiential effect is due to the fact that those who committed a crime mostly got away with it, which caused them to lower their risk estimate.
3. Research on the impact of the celerity of criminal punishment is scarce and not very encouraging regarding the notion that swifter legal sanctioning will decrease offending (Pratt & Turanovic, 2018).
4. To avoid any misunderstanding, Situational Action Theory (SAT) analytically distinguishes contexts of action from contexts of development (Treiber, 2017). The present work focuses solely on the moral context of action.
5. SAT argues that in cases where both personal and setting morality encourage criminal conduct, habitual offending is to be expected (Treiber, 2017). Under conditions of habitual behavior, controls are assumed to lack any significance.
6. Remember that a setting is defined in SAT as the sum of the features of the environment that an individual can currently access with his or her senses (Wikström et al., 2012).
7. Time spent with peers is also the most criminogenic one. Analyses of space-time budget data reveal that the physical presence of peers significantly increases the likelihood of offending: Most adolescent crime is committed in the company of friends or acquaintances of approximately the same age (Bernasco et al., 2013; Wikström et al., 2012).
8. Among the present students, refusal rates were very low.
9. The measure of shoplifting frequency was created by adding up two items: “stealing or shoplifting something worth less than \$10” and “stealing or shoplifting something worth between \$10 and \$50.”
10. The fitted models are not impaired by multicollinearity. All variance inflation factors are below 2.5.
11. It should be noted that the sanction certainty effect fails to achieve significance in the “low support for using marijuana” condition.
12. Both methodologists (McClelland & Judd, 1993) and proponents of SAT (Hardie, 2020) argue against the inclusion of covariates when testing interaction relationships with nonexperimental data.
13. Tables can be obtained from the first author upon request.
14. Examinations of condition index values reveal values above 30 in the last dimension. Inspecting the variance proportions suggests that the age variable may cause some collinearity problems. However, removing age as a control variable from the interaction analyses does not alter the findings.

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Author Biographies

Helmut Hirtenlehner is associate professor and chair of the Center for Criminology at the Johannes Kepler University Linz in Austria. His research interests include criminal deterrence, Situational Action Theory, control theories, and fear of crime. His recent publications have appeared in the *European Journal of Criminology*, *Deviant Behavior*, and the *Journal of Criminal Justice*.

Sonja Schulz is a postdoc at the Data Archive for the Social Sciences, GESIS Leibniz Institute for the Social Sciences. Her research interests include criminal decision-making, control theories, juvenile delinquency, and family studies. Her recent publications appeared in the *Journal of Quantitative Criminology* and the *European Journal of Criminology*.