

This article was downloaded by: [University of Central Florida]

On: 08 November 2011, At: 10:53

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954

Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Deviant Behavior

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/udbh20>

Testing the Deterrent Effects of Personal and Vicarious Experience with Punishment and Punishment Avoidance

Alicia H. Sitren^a & Brandon K. Applegate^a

^a University of Central Florida, Orlando, Florida, USA

Available online: 23 Feb 2007

To cite this article: Alicia H. Sitren & Brandon K. Applegate (2007): Testing the Deterrent Effects of Personal and Vicarious Experience with Punishment and Punishment Avoidance, *Deviant Behavior*, 28:1, 29-55

To link to this article: <http://dx.doi.org/10.1080/01639620600887261>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages

whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

testing the deterrent effects of personal and vicarious experience with punishment and punishment avoidance

Alicia H. Sitren and Brandon K. Applegate
*University of Central Florida, Orlando,
Florida, USA*

Stafford and Warr (1993) reconceptualized general and specific deterrence into a single theory in which people's tendencies to commit crimes are based on a combination of personal experiences and vicarious experiences with being punished and avoiding punishment. The authors make a significant contribution to the deterrence literature by considering the effect of punishment avoidance when testing deterrence theory. The present study tests the applicability of Stafford and Warr's reconceptualized theory. The results reveal only partial support for deterrence. We discuss the implications of our findings and make suggestions for future research on deterrence theory.

Traditionally, deterrence has been conceptualized as involving two distinct processes: general and specific deterrence (Stafford and Warr 1993). General deterrence aims to have an impact on more than the single offender. The punishment of a single individual serves as an example to other potential

Received 21 December 2005; accepted 21 April 2006.

Special thanks to Pamela Thomas, Eric Main, Jeremy Darty, and the UCF Faculty Center for Teaching and Learning for all their hard work, effort, and cooperation.

Address correspondence to Alicia H. Sitren, University of Central Florida, P.O. Box 161600, Orlando, FL 32816-1600, USA. E-mail: asitren@mail.ucf.edu

offenders, dissuading them from committing crimes by demonstrating the negative consequences they could expect. Specific deterrence refers to efforts that discourage an individual offender from violating the law again in the future. Under this aspect of deterrence, the punishment is not expected to have an impact on anyone besides the targeted individual (Gould and Sitren 2005). Piquero and Paternoster (1998) observed that in the past, researchers have distinguished these two types of deterrence as operating on two distinct populations: "specific deterrence affects the punished offender, whereas general deterrence affects the unpunished would-be offender who somehow witnesses or vicariously experiences punishment" (p. 3; also see Stafford and Warr 1993). Furthermore, deterrence researchers focus minimal attention on experiences with avoiding punishment. Specifically, information is not collected on whether individuals have engaged in criminal behavior and not been caught or punished and whether these individuals know of others who have engaged in criminal behavior and not been punished (Cullen and Agnew 2003).

More than a decade ago, Stafford and Warr (1993) proposed a reconceptualization of deterrence in which general and specific processes are brought together. They asserted that all individuals could be influenced by directly experiencing punishment and punishment avoidance (specific deterrence redefined) as well as by experiencing punishment and punishment avoidance indirectly when others are punished (general deterrence redefined). Thus far, only three studies have tested Stafford and Warr's propositions. The present study contributes to this literature by assessing this more encompassing conceptualization of deterrence theory as an explanation for an individual's intention to offend.

STAFFORD AND WARR'S RECONCEPTUALIZATION

The conception of general and specific deterrence is widely accepted by criminologists, but Stafford and Warr (1993) argue several shortcomings. One shortcoming is the assumption that general deterrence and specific deterrence affect different types of individuals (either punished offenders or the general public). Both general and specific deterrence are part of the deterrence process. However, general

deterrence is concerned with one's indirect experience with punishment whereas specific deterrence is concerned with one's direct experience with punishment. Second, Stafford and Warr observe that traditional notions of deterrence focus only on the effects of being punished. The possible effects of avoiding punishment for a criminal act are ignored. Stafford and Warr contend that punishment avoidance may do more to encourage crime than punishment does to discourage criminal behavior. A third shortcoming of the tradition of separating general from specific deterrence is the assumption that an offender's direct experience with suffering (i.e., specific deterrence) is the only relevant variable when predicting future behavior. However, offenders may not always suffer punishment and often commit more than one type of crime. Surely, most individuals, including offenders, will have a mixture of direct and indirect experiences with both legal punishment and punishment avoidance.

To overcome these shortcomings, Stafford and Warr (1993:127) redefine general deterrence as the "deterrent effect of indirect experience with punishment and punishment avoidance" and specific deterrence as the "deterrent effect of direct experience with punishment and punishment avoidance." Direct and indirect experience with punishment will increase an individual's perception of the certainty, and perhaps severity, of punishment. In turn, such experiences will decrease the individual's future tendency to offend. Conversely, direct and indirect experiences with punishment avoidance will increase the likelihood of future offending by reducing the perceived certainty of punishment.

Stafford and Warr (1993) note several advantages to this reconceptualization. First, recasting these concepts allows for both general and specific deterrence to apply for any person in any population. There is no longer an implication that specific deterrence affects offenders and general deterrence affects a completely distinct group of non-offenders. Thus, propensities to offend are determined by direct (or personal) experiences and by indirect (or vicarious) experiences. Furthermore, the relative influence of these experiences may not always be equal (also see Paternoster and Piquero 1995). Second, the experience of avoiding punishment is treated as separate from the experience of being punished. Analytically, this distinction is crucial. As Stafford and Warr

(1993: 125) contend, any criminal act will result in punishment or punishment avoidance, and "it is dubious to argue that only the former impacts subsequent behavior." Rather, avoiding sanctions communicates considerable information about the certainty of punishment. Stafford and Warr suggest that one other advantage to this reconceptualization is its compatibility with learning theories. As noted by Bandura (1977), experiential learning is due to the positive and negative effects of an individual's action, whereas observational or vicarious learning occurs because individuals benefit from the achievements and errors of others. Parallels may also be drawn to contemporary social learning perspectives (e.g., Akers 2001).

To summarize the position of Stafford and Warr (1993), the process of deterrence is affected by four types of experience: direct experience with punishment, direct experience with punishment avoidance, indirect experience with punishment, and indirect experience with punishment avoidance. Few studies have attempted to empirically assess the contribution of these four factors to perceptions of punishment certainty and to offending behavior. In the following section, we review these tests as a prelude to specifying the approach of the current study.

EXISTING RESEARCH ON STAFFORD AND WARR'S RECONCEPTUALIZATION

Thus far, three studies that analyzed Stafford and Warr's (1993) reconceptualization of general and specific deterrence have been published. In the earliest analysis, Paternoster and Piquero (1995) tested Stafford and Warr's reconceptualization using data from a longitudinal study of marijuana use and underage drinking. The data, collected from high school students in a southeastern city in 1981 and 1982, included measures of several salient variables. Direct experience, or in Paternoster and Piquero's (1995: 253) terminology "personal experience" with punishment was based on the respondents' reports of contact with the justice system. Personal experience with punishment avoidance was computed by subtracting the number of times the respondent had been caught for drinking alcohol or smoking marijuana from the

number of times he or she had committed these acts in the prior year. Unfortunately, indirect experience—termed “vicarious experience” by Paternoster and Piquero (1995: 253)—could be measured with only a single item. The item asked for the proportion of each respondent’s friends who used alcohol or marijuana, but no data were collected on whether they had been caught or otherwise punished. Thus, vicarious punishment experiences could not be separated from vicarious punishment avoidance, a notable limitation of this test.

As a measure of perceived sanction certainty, Paternoster and Piquero (1995) used the students’ estimate of how likely they would be to get caught by the police if they participated in underage drinking and marijuana use. Offending behavior was measured by substance use between 1981 and 1982. The second questionnaire asked respondents for the number of times they had used marijuana and drank alcohol during the previous twelve months.

Paternoster and Piquero (1995) generally found evidence in support of Stafford and Warr’s (1993) reconceptualization. The combination of both personal (specific deterrence) and vicarious (general deterrence) experiences influenced respondents’ perceived risk of punishment for drinking alcohol and smoking marijuana. Contrary to Stafford and Warr’s reconceptualization, however, the results showed a positive relationship between personal experience with punishment and subsequent substance use.

A second test of Stafford and Warr’s (1993) reconceptualization of general and specific deterrence was also conducted by Piquero and Paternoster (1998). In this study, Piquero and Paternoster applied Stafford and Warr’s model to data examining drinking and driving that was originally collected in 1986 by Snortum and Berger (1989). Because the survey was not specifically designed to test Stafford and Warr’s model, the researchers “were forced to use what [they] think are close proxies of key theoretical constructs” (Piquero and Paternoster 1998: 6). The measures of personal experience with punishment, for example, were not ideal because few respondents had been punished for drinking and driving. Only two percent had been arrested, and only 14% reported having been pulled over at a DUI check point. The latter item is also problematic because someone may be pulled

over at a checkpoint when they have not been drinking, or it may constitute punishment avoidance if a drinking driver is pulled over but not arrested.

Still, Piquero and Paternoster (1998) were able to test Stafford and Warr's (1993) restatement more thoroughly than they had in their 1995 study by including separate measures of vicarious punishment and vicarious punishment avoidance experiences. Vicarious experience with punishment was measured by respondents' reports of whether they knew anyone who had been arrested for drunk driving, had their license suspended for drunk driving, or been jailed for drinking and driving within the past year. Vicarious punishment avoidance was assessed by respondents' estimates of how many people who are convicted of drunk driving actually receive the proper punishment. Other items measured the respondents' perceived certainty and severity of punishment.

Piquero and Paternoster (1998) found that an individual's level of agreement that he or she would probably drive while over the legal limit at least once in the next year was affected by both personal and vicarious experiences. Consistent with Stafford and Warr's (1993) model, findings indicated that personally avoiding punishment encouraged future offending. Other results, however, were contrary to Stafford and Warr's (1993) predictions. Having been stopped at a DUI checkpoint and knowing someone who had been arrested or jailed or had his or her license suspended—ostensibly measures of personal and vicarious punishment, respectively—both *increased* reported intentions to offend.

In the third test of Stafford and Warr's (1993) reconceptualization, Piquero and Pogarsky (2002) recognized the limitations in the previous two studies. Rather than employing secondary data, Piquero and Pogarsky (2002) designed a study specifically to test Stafford and Warr's (1993) theory. Piquero and Pogarsky (2002) recruited 250 students from a large, southwestern U.S. university. Students were asked to complete a survey containing a hypothetical scenario in which each respondent had to make a decision about offending. Piquero and Pogarsky (2002) included separate measures of personal experience with punishment and punishment avoidance, and vicarious experiences with punishment and punishment avoidance. In addition, the researchers examined the impact of impulsivity on offending behavior.

Piquero and Pogarsky (2002) predicted that impulsive individuals would be more likely to rely on personal experiences than vicarious ones.

With regard to drinking and driving, Piquero and Pogarsky (2002) demonstrated support for Stafford and Warr's (1993) reconceptualization of general and specific deterrence. Two results supported the theory. Personal punishment avoidance and vicarious punishment avoidance decreased risk perceptions and increased the likelihood of offending. Contradicting deterrence theory, however, vicarious punishment was negatively related to perceived sanction risk. The authors also reported that impulsivity reduced the perceived certainty of punishment.

THE CURRENT STUDY

Although the literature testing general deterrence and specific deterrence separately is substantial (Nagin 1998), only the three studies reviewed here have sought to test Stafford and Warr's (1993) propositions about a combined model. The current study offers a replication and extension of Piquero and Pogarsky's (2002) study. Our study replicates Piquero and Pogarsky's approach but uses a larger sample from a different area of the country. We also extend the literature by including several variables not previously considered in this context. We assess the impact of extralegal costs and benefits of offending, explore the possibility that differences in social support predict offending intentions, and evaluate a different type of behavior. Whereas all previous studies have tested Stafford and Warr's propositions in the context of drinking behavior or drug use, we assess its explanatory power for students' intentions to cheat on a college exam. In any event, our study seeks to test the core predictions offered by Stafford and Warr: (H₁) personal and vicarious experience with punishment will increase an individual's perception of the certainty of punishment, thereby decreasing an individual's future tendency to offend; and (H₂) conversely, personal and vicarious experiences with punishment avoidance will increase the likelihood of future offending by reducing the perceived certainty of punishment.

METHODS

Sample

Eight hundred and sixty students were recruited from two general education classes at a large public university in the southeastern United States. During the fall 2004 semester, students were asked to complete an online questionnaire and were offered one extra credit point for completion. Participation was both anonymous and voluntary. With 688 respondents, the response rate was 80%.

Procedures

Participants were asked to complete a survey containing a hypothetical scenario in which the respondent does not have time to study for an important college exam and then has to decide whether or not to cheat on the exam. The subject population and survey topic were selected because they came together in a way particularly useful for testing Stafford and Warr's (1993) propositions. To produce meaningful survey responses, participants must have adequate familiarity with the selected behavior. Academic dishonesty is rampant across the majority of college campuses, and most students have engaged in it at some point in their academic careers (McCabe and Trevino 1996). Estimates are that nearly six in ten college students admit to cheating at least once (Hollinger and Lanza-Kaduce 1996; LaBeff, Clark, Haines, and Deikhoff 1990; McCabe and Bowers 1994; Meade 1992). Test cheating was chosen as the focus for the present study because it is a type of cheating that is most commonly used as a measure for academic dishonesty. Furthermore, researchers in the area tend to agree that test cheating is the most serious and unambiguous form of student cheating behavior (Franklyn-Stokes and Newstead 1995; McCabe and Bowers 1994; Roberts and Toombs 1993; Spiller and Crown 1995).

The following scenario, similar to the one developed by Piquero and Pogarsky (2002), was designed to test the key elements of Stafford and Warr's (1993) reconceptualization by placing respondents in a situation where they would have to make a decision about offending:

Suppose you did not have time to study for an important exam in one of your college courses. You must take the exam or you will receive a 0. You consider either bringing your notes to the exam that you are not supposed to have, or copying another student's answers.

After the students read the scenario, we asked them to complete several judgment questions about the situation, general questions about cheating on an exam, and other items meant to measure control variables.

Measurement of Variables

As we noted earlier, the present study replicates and extends Piquero and Pogarsky's (2002) work. In this respect, we modified their measures of the key constructs in Stafford and Warr's (1993) reconceptualization of deterrence—perceived certainty of punishment, punishment severity, personal and vicarious experiences with punishment and punishment avoidance, and likelihood of offending—to be consistent with test cheating rather than drunk driving. A summary of the operationalization of all study variables is provided in the Appendix.

Personal Experience

Personal punishment experience was defined as the number of times the participant had been caught cheating on an exam. Respondents were also asked to report the number of times that they had previously cheated on an exam. Therefore, personal punishment avoidance was calculated by subtracting the number of times students had been caught cheating on an exam from the number of times they had previously cheated on an exam.

Vicarious Experience

Individuals may have a small or very large number of acquaintances through whom they could be exposed to punishment and punishment avoidance. Therefore, using frequencies to measure vicarious experiences would be problematic. Instead, we followed Piquero and Pogarsky's (2002) lead by measuring vicarious experiences based on proportions. To measure vicarious punishment experience, we asked respondents to report what percentage of the

people they knew had ever failed an exam or a course because they cheated on an exam. To measure vicarious punishment avoidance, we subtracted this answer from each respondent's estimate of what percentage of the people they knew had cheated on a college exam, thus yielding an estimate of the percentage of acquaintances who had cheated on an exam but had not been punished.

Perceived Punishment Certainty

Immediately after reading the scenario, respondents were asked to estimate on a scale from 0 to 100 the risk of being caught by the instructor for cheating under the circumstances described in the vignette. As Klepper and Nagin (1989) observed, stating a given certainty of punishment would be artificial. Allowing participants to estimate certainty avoids a forced response that would not necessarily correspond to the respondents' actual beliefs.

Punishment Severity

To assess the effects of severity, participants were informed that if caught, they would not be expelled from the school; however, they would either fail the class or fail the exam. Students were randomly assigned to one of the two punishments. Thus, our study included an experimental manipulation of punishment severity.

Informal Costs and Benefits

Cheating on a college exam may involve both positive and negative results that are unrelated to formal sanctions. To measure a possible benefit of student cheating, we asked the respondents how much fun they thought it would be to bring notes to the exam or copy another student's answers. To measure the influence of possible informal negative consequences of cheating, the respondents were asked several questions. First, we asked them to estimate the chance that they would feel ashamed of themselves if they brought notes to the exam or copied another student's answers even if no one else found out. Second, we asked them to estimate the severity of their shame. Relatedly, each respondent reported how morally wrong it would be to cheat on the exam.

Prior Illicit Behavior

It is well established that prior offending is a good predictor of future criminality (Gottfredson and Hirschi 1990). Therefore, we followed Piquero and Pogarsky's (2002) approach by controlling for several other forms of offending and illicit behavior that might influence the respondent's propensity to cheat on a college exam. The respondents were asked whether, in the past year, they had shoplifted, had been in a fistfight, or had committed an act of vandalism. A small percentage of the respondents reported committing these offenses (6% for vandalism and 10% each for fighting and shoplifting), so we collapsed them to create a single indicator of prior offending coded 0 for no and 1 for any of the 3. Similarly, respondents were asked to estimate how many of their friends had shoplifted, committed an act of vandalism, and been in a fistfight within the past year. Responses were combined to create a measure of Vicarious Prior Offending, also dummy coded (0=no offending, 1=any offending).

Individual Differences

Impulsivity. Impulsivity in part determines how people weigh future outcomes (Nagin and Pogarsky 2004). Replicating Piquero and Pogarsky's (2002) approach, we measured impulsivity with six questions taken from the Barratt Impulsivity Index (Bachorowski and Newman 1985). Students indicated their level of agreement or disagreement with each statement on a 5-point Likert scale. We summed all responses and divided the result by the number of items answered to produce an index where higher scores indicate greater impulsivity ($\alpha=0.76$).

Social Support. Based on a thorough analysis of the correlates of crime, Cullen (1994) suggested an inverse relationship between crime and the level of social support on aggregate as well as individual levels. He contended that both expressive and instrumental supports from friends, relatives, and others in a person's social network are important in producing law-abiding behavior. To examine the influence of social support on reported intentions to cheat, we asked respondents to indicate their level of agreement or disagreement with twelve statements. These items measured instrumental dimensions (material assistance and guidance) and

expressive dimensions (sharing emotions and affirmation of self-worth) of social support. We summed the students' responses on a 5-point Likert scale. The result was divided by the number of items each respondent answered, producing an index where higher scores indicate greater social support ($\alpha = 0.83$).

Likelihood of Offending

To operationalize the dependent variable in the deterrence model, the participants estimated the likelihood that they would cheat on the exam under the circumstances provided in the scenario (on a scale of 0 to 100). A nondichotomous approach for the dependent measure allowed respondents to concede some uncertainty in the offending decision. Other details not included in the scenario may enter into people's decisions about whether to cheat on a college test. Thus, this approach allows a concrete answer while implicitly providing respondents the chance to say "it depends."

RESULTS

Across the 688 students included in the analyses, the average age was 19 years old, and 73% of the participants were female. The average weekly income was \$80, with 61% of subjects reporting they earned less than \$100 a week and approximately 8% of respondents indicating they earned \$250 or more. Average GPA was 3.10 and 65% of students were freshmen. Students admitted to considerable test cheating. The average number of times that participants admitted to having previously cheated on an exam was 3, with 42% having cheated at least once and nearly 10% admitting they had done so on more than 6 occasions.¹ A substantial number also indicated there was a chance they would cheat on the hypothetical exam if they found themselves in the situation described in the vignette. The average likelihood of offending for all participants was 17%. The estimated likelihood of getting caught was believed to be moderately high, with an average of 64%.

¹Because our question did not specify college exams, students' responses likely included cheating on exams in other settings such as elementary, middle, and high school.

TABLE 1 Zero-Order Correlations Between Key Deterrence Concepts

	y ₁	x ₁	x ₂	x ₃	x ₄	x ₅	x ₆
Likelihood of offending (y ₁)	1.00						
Punishment (x ₁)	0.13*	1.00					
Punishment Avoidance (x ₂)	0.24*	0.01	1.00				
Vicarious punishment (x ₃)	0.10*	0.09*	0.05	1.00			
Vicarious punishment avoidance (x ₄)	0.22*	0.13*	0.11*	0.10*	1.00		
Severity (x ₅)	-0.13*	0.05	-0.04	0.01	-0.01	1.00	
Certainty (x ₆)	-0.15*	0.03	-0.06	-0.07	-0.14*	-0.01	1.00

$p \leq .05$; $n = 688$

Table 1 reports zero-order correlations between the key variables in this study. Consistent with Stafford and Warr's (1993) reconceptualization of general and specific deterrence, intentions to cheat on an exam under the hypothetical scenario decreased with the certainty of punishment for cheating. Additionally, student intentions to cheat on the exam decreased with the severity of punishment. In accordance with Stafford and Warr (1993), the perceived certainty of punishment decreased with greater vicarious punishment avoidance. Also, in accordance with Stafford and Warr (1993), both personal and vicarious punishment avoidance encouraged offending. However, contrary to Stafford and Warr's (1993) reconceptualization, neither form of prior punishment (personal or vicarious) seemed to deter offending. In fact, a positive relationship was revealed between punishment experiences and likelihood of offending.

Stafford and Warr (1993) predicted that an individual's personal and vicarious experiences with punishment and punishment avoidance will influence his or her perceived certainty of punishment, and in turn, his or her likelihood of offending. To more rigorously test these hypotheses we computed regression equations with appropriate control variables. Table 2 presents the multivariate results of regressing perceived certainty of punishment on the main theoretical variables.

TABLE 2 Multiple Linear Regression of Perceived Certainty of Punishment

	B	Beta	Sig.
Punishment	1.453	0.043	0.288
Punishment avoidance	-0.147	-0.049	0.227
Vicarious punishment	0.007	0.002	0.965
Vicarious punishment avoidance	-0.142	-0.151	0.000
Severity	-0.159	-0.003	0.942

Constant = 68.213

F = 3.283

R² = 0.018

Table 2 reports findings that are partially supportive and partially not supportive of Stafford and Warr's (1993) reconceptualization. As predicted by the model, the perceived certainty of punishment significantly decreases with greater vicarious punishment avoidance. Contrary to Stafford and Warr's (1993) model, neither personal nor vicarious experiences with punishment significantly influence an individual's perceived certainty of punishment. This finding was also reported in two of the previous reconceptualization studies—Piquero and Paternoster (1998) and Piquero and Pogarsky (2002). In addition, our findings indicate that severity is not significantly related to perceived certainty of punishment. Overall, the model is significant ($p = .006$) but very weak. Approximately 2% of the variation in the perceived certainty of punishment is explained by the independent variables in the model. This finding undercuts Stafford and Warr's (1993) theory that personal and vicarious experiences with punishment and punishment avoidance influence an individual's perceived certainty of punishment, and in turn, affect one's inclination for future offending.

Table 3 reports our multivariate regression analysis of an individual's likelihood of offending. Again, the findings indicated partial support for Stafford and Warr's (1993) model. Consistent with the reconceptualization, both personal and vicarious punishment avoidance had positive and statistically significant influences on intentions to cheat on a college exam. Additionally, the experimental manipulation of punishment severity significantly impacted on decisions

TABLE 3 Multiple Linear Regression of Likelihood of Test Cheating

	B	Beta	Sig.
Punishment	2.158	0.070	0.097
Punishment avoidance	0.331	0.120	0.004
Vicarious punishment	0.022	0.006	0.892
Vicarious punishment avoidance	0.103	0.115	0.009
Severity (0 = low, 1 = high)	-7.257	-0.136	0.001
Certainty	-0.028	-0.028	0.533
Chance of shame	-0.058	-0.074	0.386
Severity of shame	-0.107	-0.134	0.142
Morally wrong	-0.026	-0.026	0.610
Fun	0.191	0.146	0.001
Prior offending (0 = no, 1 = yes)	-7.640	-0.105	0.012
Vicarious prior offending	2.078	0.037	0.380
Impulsivity index	2.760	0.067	0.104
Social support index	-0.369	-0.083	0.051
Age	0.118	0.010	0.857
Gender (0 = male, 1 = female)	1.324	0.022	0.616
Income	0.006	0.025	0.567
GPA	-0.474	-0.018	0.656
Academic standing	-1.963	-0.063	0.268
Another university	2.206	0.027	0.532

Constant = 31.550

F = 6.513

R² = 0.176

about student cheating. The higher severity level resulted in a predicted seven percentage point decrement in intentions to offend compared to the lower severity level.

Several of our findings, however, failed to support a deterrence model. Most notably, contrary to Stafford and Warr's theory, an individual's personal and vicarious experience with punishment were not significantly related to likelihood of offending. We also expected a significant relationship between the certainty of punishment and the likelihood of offending, but once punishment and punishment avoidance experiences were considered, certainty had no direct effect on offending.

Only one informal consequence affected the respondents' intentions to cheat on a college exam in ways consistent with our predictions. The amount of fun the respondent expected as a result of bringing notes to the exam or copying another

student's answers was directly related to the likelihood of offending: as the anticipated amount of fun increased, students' intentions to cheat also increased. We also expected several other extralegal considerations to relate to offending—chance and severity of shame and moral wrongfulness—but they did not.

Several additional findings are less directly relevant to a deterrence model but are notable. As shown in Table 3, intentions to offend were higher for respondents who had less social support. Contrary to our predictions, the respondent's prior offending behaviors were inversely related to the likelihood of offending; that is, individuals who had previously engaged in one of the offenses listed tended to report a lower likelihood of cheating. None of the remaining variables in the model—friend's illicit behavior, age, income, impulsivity, gender, GPA, and academic standing—were related to the decision to cheat. Nevertheless, the second regression model as presented in Table 3 had much greater explanatory power than that of our first regression model. Approximately 18% of the variation in the likelihood of offending is explained by the independent variables in the model.

DISCUSSION

Stafford and Warr's (1993) reconceptualization of deterrence has caused many deterrence researchers to reconsider the sharp distinction between specific and general deterrence. More importantly, Stafford and Warr introduced the concept of punishment avoidance. The theorists argued that avoiding punishment may be more influential to the deterrence process than actual punishment. Surely, most individuals should have a combination of personal and vicarious experiences with punishment and punishment avoidance. Stafford and Warr (1993) suggest the collection of several salient variables—an individual's direct experiences with punishment, an individual's indirect experiences with punishment, an individual's direct experiences with punishment avoidance, and an individual's indirect experiences with punishment avoidance.

Although the literature testing specific and general deterrence is substantial, studies on deterrence fail to consider many of the factors suggested by Stafford and Warr. Seldom do any of the previous studies examine the effects of avoiding punishment. Furthermore, the direct and indirect effects

of experience are rarely examined together. Specific deterrence research typically focuses on direct experiences with punishment whereas general deterrence research focuses on indirect experiences with punishment. Therefore, Stafford and Warr make a fundamental contribution to the deterrence literature advocating the importance of punishment avoidance to the deterrence process and the consideration that most individuals have some combination of direct and indirect experiences. As presented in this paper, Stafford and Warr's theory has not been extensively tested. The current study sought to examine the effects of personal and vicarious experiences with punishment and punishment avoidance on future tendency to offend, specifically a student's propensity to cheat on a college exam.

Our results, similar to those of the previous investigations in this area, provide only partial support for Stafford and Warr's (1993) conception of deterrence. Consistent with their propositions, experience with escaping punishment substantially reduced people's estimates of their risk of being sanctioned and increased the likelihood that they would engage in academic dishonesty. Moreover, perceived certainty of punishment and the chances of offending were determined not only directly by personal experiences, but also vicariously through the punishment avoidance experiences of acquaintances. Also consistent with Stafford and Warr was the negative relationship between punishment severity and likelihood of cheating.

The results for experiences with punishment were more complicated and did not always square with expectations from deterrence theory. Bivariate relationships with punishment experiences (both personal and vicarious) and an individual's likelihood of offending were found to be positive. However, once other variables were considered (multivariate models), these relationships were not significant. This finding is inconsistent with Stafford and Warr's (1993) conceptualization—and with any statement of deterrence theory—which predicted a negative relationship between punishment and future offending.² Even though these results

²Of course, other theoretical perspectives predict a positive association between punishment and future offending (Lemert 1979) or specify in what situations punishment may encourage rather than discourage continued criminality (Braithwaite 1989).

conflict with Stafford and Warr and deterrence theory, several previous empirical studies of Stafford and Warr's restatement have reported similar findings. Paternoster and Piquero (1995) found a significant positive association between personal punishment experience and an individual's likelihood of offending. In 1998, Piquero and Paternoster found significant positive relationships between both personal and vicarious punishment experiences and an individual's tendency to offend. Piquero and Pogarsky (2002) reported a positive relationship between vicarious punishment and likelihood of offending but reported no relationship between personal punishment and likelihood of offending.

Thus, tests of Stafford and Warr's (1993) propositions have revealed no support for the traditional assertion that experiencing punishment deters offending. Our results, however, validate Stafford and Warr's contention that *avoiding* punishment is an important determinant of offending decisions. Personally avoiding punishment for cheating in the past increased our respondents' intentions to cheat again. Similarly, two prior studies report positive relationships between future offending and personal avoidance of punishment (Paternoster and Piquero 1995; Piquero and Paternoster 1998). Our results for vicarious punishment avoidance were similar, producing increased chances of illicit behavior, and are consistent with Piquero and Pogarsky's (2002) results for drunk driving. The empirical evidence, therefore, reveals the importance of Stafford and Warr's contribution: any further theorizing must consider the impact of past experiences with avoiding negative consequences on subsequent offending decisions.

From the perspective of decreasing the incidence of student test cheating, several of our results are salient. First, an immediate and real threat of punishment for cheating may have some deterrent effect. The experimentally manipulated severity of possible future punishment was one of the strongest predictors of cheating intentions—facing the threat of failing a class was more dissuasive than the threat of failing a single exam. This finding is somewhat curious, given that past experience with punishment did not affect students' perceptions of their chances of getting caught or their intentions to cheat. A possible explanation for the effects of expected punishment severity is that the vignette raised the

respondents' awareness of this threat by directly mentioning it. This may reflect something akin to the announcement effect observed in past research on deterrence, where introduction of a punitive policy decreases offending only temporarily (Nagin 1998).

Second, although our results showed that personal and vicarious punishment had no effect on students' intentions to cheat, avoidance of punishment contributed significantly to students' decisions. Thus, the more our respondents or their friends had "gotten away with it," the more likely they were to cheat. Reducing the frequency with which students can duck punishment for academic dishonesty may lead to subsequent decreases in offending.

Third, internal consequences had mixed effects. Anticipating a certain thrill out of cheating increased its likelihood. This finding is consistent with other studies showing that illicit behaviors are more likely when they are perceived as fun or thrilling (Tibbetts and Myers 1999; Wood, Gove, Wilson, and Cochran 1997; see also Katz 1988). However, the respondents' perceptions of moral wrongfulness and of how much they would feel ashamed by cheating were unrelated to their intentions. These results conflict with prior research that tends to show concerns about morality and shame significantly affect offending decisions (Grasmick, Bursik, and Arneklev 1993; Pratt, Cullen, Blevins, Daigle, and Madensen forthcoming; Tibbetts 1997). They also do not comport with the evidence on the usefulness of student honor codes, which have shown some success at decreasing academic dishonesty (McCabe, Trevino, and Butterfield 2002). Given that observers contend that honor codes rely on individual internalization and "a community of honesty" to be effective (Dufresne 2004: 202), some additional work remains to reconcile these findings with the results of the present study.

Finally, social support may act as an insulator against academic dishonesty. We introduced only a beginning assessment of social support, but it showed that students with greater access to instrumental and expressive support from friends and family were less inclined to cheat on a college exam. At this point, it is not completely clear why greater social support reduces propensities to cheat. As Pratt and Godsey (2003: 613) suggest, social support "may increase family efficacy and promote better parenting practices, it

may aid in the prosocial adaptation to criminogenic strains, it may facilitate earlier criminal desistance patterns over the life course, and it may even be a necessary precondition for effective social control." Investigation of these possibilities should occupy future research efforts.

CONCLUSION

The present study is one of only a small handful that have directly tested Stafford and Warr's (1993) model, blending specific and general deterrence. These studies are beginning to reveal some patterns. Consistent with this reconceptualization, punishment avoidance consistently has been found to be a significant predictor of offending. Also, vicarious as well as personal experiences are salient factors in decisions about criminal and illicit behavior. Less supportive of deterrence theory, prior punishment experiences have been positively related to offending in past studies and were unrelated to cheating in the current one. Furthermore, the core dimensions of the theory—personal and vicarious experience with punishment and punishment avoidance—have not always related to people's perceptions of the certainty of future punishment in ways that the theory would predict. Future research will need to work toward resolving the conflicts between theoretical predictions and empirical reality if deterrence theory is to persist. Research is also needed that broadens the scrutiny of Stafford and Warr's model. To examine the generalizability of deterrence theory, future studies need to expand consideration to crimes beyond those involving drinking and drug use. The present study is the first to test Stafford and Warr's predictions on a different type of offense. Other studies should seek to test the theory with known offenders. Thus far, Stafford and Warr's conceptualization of deterrence theory has been examined only among largely pro-social groups—high school students, college students, and the general public. A research agenda addressing these limits of the current literature would promote a deeper understanding of deterrence theory and would help to clarify what aspects of Stafford and Warr's (1993) restatement remain viable and what aspects should be reconsidered.

REFERENCES

- Akers, R. L. 2001. "Social Learning Theory." Pp. 192–210. In *Explaining Criminals and Crime*, edited by R. Paternoster and R. Bachman. Los Angeles: Roxbury.
- Bandura, A. 1977. *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bachorowski, J. and J. P. Newman. 1985. "Impulsivity in Adults: Motor Inhibition and Time-Interval Estimation." *Personality and Individual Differences* 6:133–6.
- Braithwaite, J. 1989. *Crime, Shame and Reintegration*. New York: Cambridge University Press.
- Cullen, F. T. 1994. "Social Support as an Organizing Concept for Criminology: Presidential Address to the Academy of Criminal Justice Sciences." *Justice Quarterly* 11:527–59.
- Cullen, F. T. and R. Agnew. 2003. *Criminology Theory: Past to Present*, 2nd ed. Los Angeles: Roxbury Publishing Company.
- Dufresne, R. 2004. "An Action Learning Perspective on Effective Implementation of Academic Honor Codes." *Group and Organization Management* 29:201–18.
- Franklyn-Stokes, A. and S. Newstead. 1995. "Undergraduate Cheating: Who Does What and Why?" *Studies in Higher Education* 20:159–72.
- Gottfredson, M. R. and T. Hirschi. 1990. *A General Theory of Crime*. New York: Macmillan.
- Gould, L. A. and A. H. Sitren. 2005. "Crime and Punishment: Punishment Philosophies and Ethical Dilemmas." Pp. 181–96. In *Justice, Crime and Ethics*, 5th ed., edited by M. C. Braswell, M. R. McCarthy, and B. J. McCarthy. Cincinnati: Anderson.
- Grasmick, H., R. Bursik, and B. Arneklev. 1993. "Reduction in Drunk Driving as a Response to Increased Threats of Shame, Embarrassment, and Legal Sanctions." *Criminology* 31:41–67.
- Hollinger, R. and L. Lanza-Kaduce. 1996. "Academic Dishonesty and the Perceived Effectiveness of Counter Measures: An Empirical Survey of Cheating at a Major Public University." *NASPA Journal* 34: 292–306.
- Katz, J. 1988. *Seductions of Crime: Moral and Sensual Attractions of Doing Evil*. New York: Basic Books.
- Klepper, S. and D. Nagin. 1989. "Certainty and Severity of Punishment Revisited." *Criminology* 27:721–46.
- LaBeff, E. E., R. E. Clark, V. J. Haines, and G. M. Diekhoff. 1990. "Situational Ethics and College Student Cheating." *Sociological Inquiry* 60:190–8.
- Lemert, E. 1979. "Primary and Secondary Deviance." Pp. 193–5. In *Classics of Criminology*, edited by J. E. Jacoby. Prospect Heights, IL: Waveland.

- McCabe, D. L. and W. J. Bowers. 1994. "Academic Dishonesty among College Males in College: A Thirty Year Perspective." *Journal of College Student Development* 35:5–10.
- McCabe, D. L. and L. K. Trevino. 1996. "What We Know about Cheating in College." *Change* 28:29–33.
- McCabe, D., L. Trevino, and K. Butterfield. 2002. "Honor Codes and Other Contextual Influences on Academic Integrity: A Replication and Extension to Modified Honor Code Settings." *Research in Higher Education* 43:357–78.
- Meade, J. 1992. "Cheating: Is Academic Dishonesty Par for the Course?" *Prism* 1(7):30–2.
- Nagin, D. S. 1998. "Criminal Deterrence Research at the Outset of the Twenty-First Century." Pp. 1–42. In *Crime and Justice: A Review of Research*, vol. 23, edited by Michael Tonry. Chicago: University of Chicago Press.
- Nagin, D. S. and G. Pogarsky. 2004. "Time and Punishment: Delayed Consequences and Criminal Behavior." *Journal of Quantitative Criminology* 20:295–317.
- Paternoster, R. and A. Piquero. 1995. "Reconceptualizing Deterrence: An Empirical Test of Personal and Vicarious Experiences." *Journal of Research in Crime and Delinquency* 32:251–86.
- Piquero, A. and R. Paternoster. 1998. "An Application of Stafford and Warr's Reconceptualization of Deterrence to Drinking and Driving." *Journal of Research in Crime and Delinquency* 35:3–39.
- Piquero, A. R. and G. Pogarsky. 2002. "Beyond Stafford and Warr's Reconceptualization of Deterrence: Personal and Vicarious Experiences, Impulsivity, and Offending Behavior." *Journal of Research in Crime and Delinquency* 39:153–86.
- Pratt, T., F. Cullen, K. Blevins, L. Daigle, and T. Madensen. 2006. "The Empirical Status of Deterrence Theory: A Meta-Analysis." In *Taking Stock: The Status of Criminological Theory*, edited by F. T. Cullen, J. P. Wright, and K. R. Blevins. New Brunswick, NJ: Transaction.
- Pratt, T. and T. Godsey. 2003. "Social Support, Inequality, and Homicide: A Cross-National Test of an Integrated Theoretical Model." *Criminology* 41:611–43.
- Roberts, D. and R. Toombs. 1993. "A Scale to Assess Perceptions of Cheating in Examination-Related Situations." *Educational and Psychological Measurement* 53:755–62.
- Snortum, J. and D. Berger. 1989. "Drinking-Driving Compliance in the United States: Perceptions and Behavior in 1983 and 1986." *Journal of Studies on Alcohol* 50:306–19.
- Spiller, S. and D. Crown. 1995. "Changes over Time in Academic Dishonesty at the Collegiate Level." *Psychological Reports* 76:763–8.

- Stafford, M. C. and M. Warr. 1993. "A Reconceptualization of General and Specific Deterrence." *Journal of Research in Crime and Delinquency* 30:123–35.
- Tibbetts, S. 1997. "Shame and Rational Choice in Offending Decisions." *Criminal Justice and Behavior* 24:234–55.
- Tibbetts, S. and D. Myers. 1999. "Low Self-Control, Rational Choice, and Student Test Cheating." *American Journal of Criminal Justice* 23:179–200.
- Wood, P., W. Gove, J. Wilson, and J. Cochran. 1997. "Nonsocial Reinforcement and Habitual Criminal Conduct: An Extension of Learning Theory." *Criminology* 35:335–66.

APPENDIX Operationalization of Variables

Concept	Operationalization	Label
Personal punishment experience	How many times have you been caught cheating on an exam?	Punishment
Personal punishment avoidance	How many times have you previously cheated on an exam—Punishment	Punishment avoidance
Vicarious punishment experience	What percentage of the people you know personally have ever failed an exam or a course because they cheated on a college exam?	Vicarious punishment
Vicarious punishment avoidance	What percentage of the people you know personally do you think have cheated on a college exam—Vicarious punishment	Vicarious punishment avoidance
Perceived certainty of punishment	If you cheated on an exam under the circumstances described above, what is the chance (on a scale from 0 to 100) you would be caught by the instructor?	Certainty
Punishment severity	If you are caught cheating on the exam, you will not be expelled. However, you will fail the exam or fail the course (students were randomly assigned to one of two punishments).	Severity
Extralegal benefits of cheating	How much fun would it be (on a scale from 0 to 100, where 0 means not at all fun and 100 means very fun) to bring notes to the exam or copy another student's answers?	Fun

Chance of feeling ashamed (extralegal costs)	What is the chance that you would feel ashamed of yourself if you brought notes to the exam or copied another student's answers even if no one else found out (on a scale from 0 to 100, where 0 means not at all ashamed and 100 means very ashamed)?	Chance of shame
Severity of shame (extralegal costs)	If you felt ashamed of yourself, how ashamed would you be (on a scale from 0 to 100, where 0 means not at all ashamed and 100 means very ashamed)?	Severity of shame
Morally wrong (extralegal costs)	How morally wrong (on a scale from 0 to 100, where 0 means not at all morally wrong and 100 means very morally wrong) would it be to bring notes to the exam or copy another student's answers?	Morally wrong
Prior offending	Within the last year, have you shoplifted? Within the last year, have you committed an act of vandalism?	Prior offending
Vicarious prior offending	Within the last year, have you been in a fist-fight? During the last year, how many of your friends have shoplifted? During the last year, how many of your friends have committed an act of vandalism?	Vicarious prior offending

(Continued)

APPENDIX Continued

Concept	Operationalization	Label
Impulsivity	<p>During the last year, how many of your friends have been in a fistfight?</p> <p>I act on impulse.</p> <p>I often do things on the spur of the moment.</p> <p>I always consider the consequences before I take action.*</p> <p>I rarely make hasty decisions.*</p> <p>Sometimes I do things that I later regret.</p> <p>Occasionally I act first and think later.</p>	Impulsivity index
Social support	<p>When I have a bad day, I can talk to my friends.</p> <p>I have people I can share my successes with.</p> <p>I don't really have anyone I can talk to about my feelings.*</p> <p>I can count on my friends to make me feel good about myself.</p> <p>My family lets me know they are proud of me.</p>	Social support index

<p>I don't know anyone I can go to for advice.* My friends never compliment me.* I have friends who would help me study if I needed it. I have friends who would give me a ride somewhere if I needed it. My family helps me pay for school. I can talk to my parents when I need advice. My friends encourage me to do the right thing. What is the likelihood (on a scale from 0 to 100) that you will cheat on the exam under the circumstances presented in the scenario?</p>	<p>Likelihood of offending</p>
<p>Age Gender Income GPA Academic standing Another university</p>	<p>Likelihood of offending</p>

*Items were reverse coded.