

The Role of Affect in Intended Rule Breaking: Extending the Rational Choice Perspective

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Abstract

Objectives: Through a mood induction procedure, we prime positive, negative, or a neutral affective state and examine its effect on intentions to cheat on an exam and drinking and driving. **Method:** University students served as subjects for the study. They were provided with a questionnaire that randomized a mood induction procedure. Respondents were asked to recall (1) a recent positive event or experience, (2) a recent negative event or experience, or (3) their favorite books. They then completed a questionnaire that asked about their current mood state and got their responses to two hypothetical crime scenarios—cheating on an exam and drinking and driving. They were also asked questions pertaining to perceived risk, their decision-making style, impulsivity, and confidence. **Results:** We found that those experiencing an intense positive mood state were generally less likely to report that they

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would cheat or drive drunk relative to the negative and neutral state. However, we found little support for the suggested mediating causal mechanisms. *Conclusions:* Affective states milder than emotions are related to intentions to commit acts that are in the long-term harmful and go against self-interest. The relationship between affect states and criminal decision making can benefit from additional research.

Keywords

rational choice theory, criminological theory, cognitive theories, antisocial behavior

The heart has its reasons which reason does not understand.

—Pascal

Introduction

While affective states such as emotions have been common ingredients in criminological theory,¹ much like its economic cousin (Loewenstein 1996, 2000; Rick and Loewenstein 2008), rational choice theory in criminology has, with some important exceptions,² treated emotional states as epiphenomenal. Further, although criminologists seem fully aware of the power of emotions in directly influencing crime, they had not given as much attention as we think they should to the role of other affective states such as moods. Although admittedly there is some confusion even in the well-developed literatures of psychology and behavioral economics on this matter, emotion is not the same thing as mood.³ For ease of discussion, we will presume that both emotions and moods are types of more general affective or internal feeling states. We take mood to be a lower intensity feeling with no clear or specific referent (Forgas 2002). In a good or bad mood, one feels positive and negative affect that is both mild and has no specific object. Emotion, on the other hand, is a more intense mental state that is generally more short-lived and has a specific target—the emotion producing event. As examples, drinking alcohol or smoking a joint with some friends produces an affective mood of happiness or contentment that is somewhat directionless, while being cut off by someone on the highway produces the strong emotional state of road rage that is specifically directed at the \$#\$@\$ who cut you off.

There is another important distinction between emotions and moods that is particularly relevant for our concern here. Many researchers have argued

that emotions are very action oriented in that once felt they lead the one experiencing it to take some immediate action (Ekman and Davidson 1994). This is certainly the position taken by criminologists like Agnew (2006) and Katz (1989) who assert that strong emotional states like anger directly and immediately motivate persons to respond or adapt, frequently through crime. Moods, on the other hand, have been argued to be less action directed and more focused on cognition. Mood states affect how we collect and process information, how we think, and go about making decisions (Forgas 2002). For example, Clark and Isen (1982) suggested that a positive mood leads to less effortful and more intuitive processing of information, and numerous studies have shown that negative affect reduces one's reliance on stereotypes, scripts, impressions, and other types of preexisting information that can lead to judgmental errors. Specifically, affective states have been suggested to influence behavioral decisions by making people more or less impulsive, shortening their time horizon, making them more or less risk averse, overconfident, or inclining them to use decision-making strategies that are more intuitive, quick, and less deliberate and contemplative. These are obviously mediating causal mechanisms that are central to rational choice theories of crime and likely other theories of crime as well. However, while behavioral economists have clearly begun to recognize the importance of affective states in impacting cognitive processes and ultimately decisions (Camerer and Loewenstein 2004), criminologists in the rational choice tradition have yet to fully incorporate affect (moods or emotions) into their theoretical schema.

We acknowledge that there remains much confusion in the literature about the degrees of separation between general affective states, moods, and emotions. However, our purpose here is not to convince anyone of the importance or even the necessity of the distinctions among these constructs and we will use the terms mood and affect interchangeably in this article. Our purpose is to argue that while strong, temporary emotional states such as anger have been and continue to be a common staple in many criminological theories (Agnew 2006; Akers and Jensen 2007; Katz 1989) and in recent theories of criminal desistance (Giordano, Schroeder, and Cernkovich 2007), criminologists have devoted less attention to the possibility that other affective states such as positive and negative moods may influence the decision to commit crime and that the effect of mood may be more indirect than emotional states by impacting either the collection or processing of the information that goes into decision making.

In this article, we present the result of an experiment with a sample of university students where we intentionally primed two affective states, one

positive and one negative, with a mood induction procedure common in the affect literature. We examine the relationship between positive, negative, and neutral affect on intentions to commit two offenses common among university students—cheating and drinking and driving. We then empirically examine several hypothesized reasons why affect might matter for behavior. These reasons include the effect of mood states on the use of rational analytic strategies in making decisions, the use of quick or intuitive decision-making strategies, the shortening of subjects' time horizon, reducing the perceived risk of an action, and the effect on overconfidence and impulsivity. In the following sections of the article, we present a brief review of the extant empirical literature in economics and psychology on the relationship between affect and behavior and the suggested causal mechanisms. We then move to a discussion of the methodology of our study on affect and intentions to cheat and drink and drive followed by our findings. We end with a discussion of the implications of our results for rational choice theory.

Affect's Effect on Behavior

Efforts to examine the relationship between affect and behavior, particularly rule-breaking, self-destructive, or risk-taking behavior, have produced an abundant literature in psychology but little in the way of definitive conclusions. There is literature that can be brought to bear on the conclusion that positive affect is related to self-defeating behaviors, that negative affect is related to self-defeating behaviors, and that the relationship is *U*-shaped with affect of any valence being related to actions detrimental to self-interest.

With respect to the view that negative affect increases the risk of harmful actions, Leith and Baumeister (1996) had students in one experiment provide two autobiographical accounts, one that describes an action in their life which resulted in a bad consequence and a second that resulted in a favorable outcome. After the narratives were provided, the students were asked the role that their mood at the time played in the story. They found that unfavorable consequences were preceded by bad moods and a risky decision, while outcomes that were judged favorable were preceded by good moods and a diminished reliance on risky decisions. They then induced a negative, positive, or neutral mood in their subjects and found that those in the negative affect condition were more likely to take a high-risk gamble than a sure bet. Based upon years of clinical work in a Veterans Affairs hospital for compulsive gamblers, Peck (1986) has argued that compulsive, as contrasted with social, gambling is related to negative affect brought on by a

losing streak and an attempt by gamblers to “chase” their losses with a greater sense of urgency. In a related experimental study, Bruyneel et al. (2009) found that the worse subjects felt before they began the experiment, the more money they spent on high-risk lottery tickets some 25 minutes later. In addition to risky gambles, a negative affective state has been shown to be related to other failures of self-control such as overeating or eating the wrong things (Macht, Roth, and Ellgring 2002; Tice, Bratslavsky, and Baumeister 2001), stock market losses (Edmans, García, and Norli 2007), spending too much (Cryder et al. 2008), smoking (Ashton and Stepney 1982; Brownell et al. 1986), drug use (Wills et al. 1999), excessive alcohol consumption (Hull, Young, and Jouriles 1986), and aggressive behavior (Berkowitz 1990; Bushman, Baumeister, and Phillips 2001). Strong negative emotions have also been found to be related to delinquency, adult criminality, and substance use (Agnew 2006; Giordano et al. 2007; Katz 1989).

There is much less empirical evidence with respect to the relationship between positive affective states and self-harming behavior, but the literature suggests that positive affect may at times lead to a weakening in self-control. Cooper et al. (1995) found support for the position that excessive alcohol use is motivated by a desire to extend or enhance a positive mood. Such “drinking to enhance” behavior has been found to exist among college student drinkers (Labouvie and Gates 2002), alcohol abusers who are in treatment, as well as used to explain relapse among recovering alcoholics (Marlatt and Gordon 1980; Woody, Urschel, and Alterman 1992). The need for novelty and sensation seeking brought on by positive affect has also been found to be related to substance use among adolescents (Wills, Vaccaro, and McNamara 1994; Wills, Windle, and Cleary 1998). Positive affect has also been shown to lead to a breakdown in control and reckless gambling. In two experiments with college students, Cummins, Nardorff, and Kelly (2009) demonstrated that those who won money and prizes in an initial round of betting were more likely to feel positive affect and to subsequently make more reckless gambles, defined as betting too much money on gambles they were likely to lose, than those who lost in an initial round. The authors speculated that those who won initial gambles and felt good about it were optimistic about their risks in subsequent bets in the same way that individual investors make poor investments by buying stock that have recently risen in value expecting them to continue to rise (Barber, Odean, and Zheng 2000). Further, as anyone who has walked by a Cinnabon store in the mall and savored the luscious aroma can attest, positive affect can also lead us to ignore self-control and either eat bad foods (Macht et al. 2002) or needlessly spend money. In fact, the discipline of “retail

atmospherics” is devoted to the study of how retailers successfully encourage consumer spending of all kinds by deliberately creating a positive affect either through aromas or false flattery (Kotler 1974). Babin and Dardin (1996) provided direct support for this. In a survey of mall customers who were part of a marketing study, they reported that those who reported feeling positive also reported higher spending.

While there is evidence to suggest that negative affect results in a breakdown of will and self-harming behaviors, as well as evidence that positive affect leads to a weakening of self-control, there is also evidence of a U-shaped relationship that relative to no affect *both* positive and negative affect can bring about a decline in self-regulation and undesired behaviors. In an early study, Rosenhan, Underwood, and Moore (1974) asked elementary school-aged children to think and verbally describe happy things (positive affect), sad things (negative affect), or were not asked to think of anything (neutral). As part of the experiment, the children were told that they could place pieces of candy into a sack that they would get to keep (what the experimenters called “self-gratification”). Compared with children in the neutral affect condition, both those in the positive and negative affect condition had significantly more candy in their sack. In a follow-up study, Moore, Clyburn, and Underwood (1976) again asked elementary school-aged children to recall events that made them happy (positive affect) or sad (negative affect) and were later asked to help themselves to a treasure chest loaded with pennies. Consistent with previous findings, they found that compared with a no affect condition, those in both the positive and negative affect conditions grabbed significantly more pennies. In a more recent study, Simons et al. (2005) examined alcohol use within a sample of college students and found that higher levels of both positive and negative affect felt during the day was related to higher levels of alcohol consumption that evening.

In several criminological theories, there are hypothesized theoretical links between strong emotional states and crime. In Agnew’s (2006) General Strain Theory, for instance, different types of strain are connected to criminal adaptations to the extent that they generate negative emotional states, particularly anger and frustration. While not unanimous, researchers have found that anger, depression, and even fear are related to different kinds of criminal acts (see Agnew 2006 for a review). Katz (1989) has argued that fierce emotions emerge before murders in which the “righteous killer” interprets the situation as one wherein the to-be victim threatens his or her basic human worth. An initial feeling of humiliation at the hands of the offending party turns into a murders’ rage as an act of murder through the complete obliteration of the victim becomes the only way to resolve the

issue. An even higher emotional level is achieved by the “cold-blooded” killer who is described as being “emotionally dizzy” with his or her own superiority over the victim.

More recently, Giordano et al. (2007) have presented a revised version of their earlier theory of cognitive transformations and desistance from crime that includes a healthy dose of emotions. They argue that an important component of what they call the necessary “upfront” work or cognitive transformation that offenders trying to quit crime must undergo is a recrafting of their earlier identity. While bitter family conflicts that occurred when younger led many adolescents to form angry or depressive identities as adolescents, identities that keep them involved in crime, those who successfully quit crime are able to construct new pro-social identities. These new identities are frequently forged out of satisfying relationships with more conventional romantic partners in young adulthood, and the bases of these identities are both healthier emotions and healthier understandings of past emotions. These emotional identities can be viewed as comparable to affective states that are of central concern in this article. Moreover, while Giordano et al. provide some support for the connection between emotions or affect states and criminal offending, we extend their findings here with experimental data.

Although part of several criminological theories, we have suggested that rational choice theorists have generally adopted the position of standard economic theory’s notion of revealed preferences that affective states play no role in one’s utility function and are therefore irrelevant for understanding choices and decision making. We think, however, that affect states are relevant for rational choice theory because they impact mediating cognitive processes (Ekman and Davidson 1994; Forgas 2006). Positive and negative affective states have been linked to self-harmful actions by decreasing the expected or perceived riskiness of the self-defeating behavior, foreshortening a person’s time horizon, changing the strategies used in decision making away from rational deliberation toward a more intuitive strategy, and making the person overconfident and impulsive. We turn to a brief discussion of these mechanisms in the next section.

Cognitive Links between Affect and Self-defeating Behavior

Leith and Baumeister (1996:1250) observed that while we assume that people are rational we consistently watch them engage in behaviors that are self-defeating. In explaining why this is so, they argue that a negative affective state, or “bad mood,” leads people to diminish the perils of high-risk activity:

“when people are upset, they tend to choose high-risk, high-payoff options.” The causal link between negative affect and self-harming behaviors for Leith and Baumeister, then, is through a diminishment of the perceived risks of what normally would be considered high-risk behavior. A number of other scholars have also adopted this position. In a process referred to as “positive-affect maintenance,” Isen and colleagues have argued that positive affect is related to both a sense of optimism (self-confident expectations about future probabilities) and risk aversion as those in a good mood would not like to do anything to spoil that mood, and negative affect is related to risk preference because someone in a poor mood will want to do something to change their mood even if it means engaging in high-risk behaviors (Isen 2000; Isen, Nygren, and Ashby 1988; Nygren et al. 1996). A similar argument was proposed by Tice and Bratslavsky (2000:149) who suggested that “when in a bad mood, people want to feel better, and many ways of feeling better involve indulging appetites—things that one normally uses self-control to resist.” Leith and Baumeister (1996:1250) have also argued for a connection between negative affect, risk taking, and a weakening of self-control: “when people are upset they tend to choose a high-risk, high-payoff option.” They presumably choose these options in the hope of gaining the high payoff by diminishing the perceived risk involved, but in many cases the risk will materialize, leading to an aversive and costly outcome (see also Bruyneel, Dewitte, Franses, and Dekimpe 2009). More recently, Kuhnlen and Knutson (2011) also posited a causal connection between affect and self-defeating behavior (financial losses) but suggested that it is positive affect that leads people to take greater risks because they ignore information that contradicts their prior choices (see also DeVries et al. 2012).

Another line of argument links affective states to self-defeating behavior by way of one’s time preference. Moore et al. (1976:274) speculated that a positive affect would lead people to delay immediate rewards in favor of “their ultimate best interests,” while a negative affect will lead people to focus on “immediately available rewards.” In articulating why those experiencing negative affect would favor immediate over delayed rewards, they suggested an argument similar to Isen’s “positive affect maintenance”—those feeling bad would want to do something immediately to alter their mood, while those already experiencing positive affect would be more attuned to their long-run interests. More recently, Ifcher and Zarghamee (2011) have suggested that positive affect generally has favorable outcomes because it impacts a decision maker’s preference for future over present utility. As to why a positive mood would incline to a more future time orientation, they posit several reasons; positive affect increases

forward-looking thinking by (1) increasing the ability of persons to stay on task and (2) increasing self-control and patience. Contrary to this, Wilson and Daly (2004) have put forth an argument that when affective states are positive there is a tendency to discount the future and succumb to more immediate temptation.

A number of scholars have argued that one's affect state has its effect on self-defeating behaviors by impacting the strategy or cognitive style used in making decisions. There is general agreement that when decision making is more deliberate, contemplative, and cognitive, outcomes are more favorable, and are less favorable when quicker, and more intuitive (Burks et al. 2009; Frederick 2005; Kahneman 2010). There is less agreement, however, as to which affective state leads to the adoption of a better decision-making strategy. For example, Isen (2000, 2008) posits that positive affective states can lead to better decision making by increasing cognitive flexibility and elaboration, more efficient and creative thinking, and more reasoned, thorough, and rational thinking (see also Leith and Baumeister 1996; Lyubomirsky, King, and Diener 2005). Others make a different prediction. Forgas (2000) argued that it is a positive affective state that gives rise to a simpler, less rational, and more intuitive information processing and decision-making style, while negative affect leads to more a more cognitive and rational style. Frijda (1986) similarly argued that negative moods promote more analytical and rational decision-making strategies and that a positive affective state gives rise to more heuristic and intuition-based strategies. This position that positive arousal disrupts rational and deliberate information processing was also taken by Bless et al. (1990) who held that positive mood states lead people to rely more on intuitive and shallow decision-making strategies and that such "quick and easy" thinking leads to an inability to resist temptation.

Finally, some scholars have argued that affective states have an effect on self-defeating behaviors through their impact on impulsivity and overconfidence. While there is no consensus as to whether it is positive or negative affective moods that influence impulsivity and confidence, there is agreement that affect can impact them which in turn weakens or strengthens self-regulation. For instance, Johnson and Tversky (1983) have suggested that feelings of positive affect lead one to feel more generally optimistic which in turn leads to a reduction in perceived risks. In addition, there is a great deal of literature which shows that subjects who initially win in gambling games begin to think more optimistically that their good luck will continue and so begin to make more risky gambles (Cummins et al. 2009; Nygren et al. 1996; Wright and Bower 1992). Relatedly, Anderson and Galinsky (2006) argued that possessing power and the positive affect that

it brings leads persons to feel more optimistic about future outcomes including the attendant risks, with the result that they are more likely to engage in high-risk behaviors. If a lack of impulse control is taken as succumbing to an immediate temptation which may be harmful in the long-term, then a large body of research has suggested that the causal mechanisms linking affect (both positive and negative) to self-defeating behaviors is impulsivity. The argument is that sometimes very negative moods lead to impulsive behaviors in a form of emotional regulation as distraught persons indulge their impulses in an attempt to change their mood (Cryder et al. 2008; Giordano et al. 2002; Tice et al. 2001). Similarly, very positive moods would lead to impulsive behavior in order to sustain the positive feelings (Baumeister 2002; Tice and Bratslavsky 2000). An example would be strategies that businesses use to make consumers feel good so as to spur impulsive buying (O'Guinn and Faber 1989).

In sum, while the literature with respect to the role of affect in self-defeating behavior is quite contradictory with respect to specifics, there is agreement that (1) affect is related to harmful behaviors and (2) this occurs because of the effect that affect has on a person's risk assessments, time horizon, information processing and decision-making style, impulsivity, and/or overconfidence. Nevertheless, while there is an abundant literature in psychology and economics about how affective states are associated with behaviors like excessive eating, drinking, gambling, consumer spending, and investment decisions, rational choice criminologists have not devoted much attention to affective states and the role they play in decision making about crime. In this article, we report the result of an experiment in which we used a mood induction procedure to create three affective states (positive, negative, and neutral). We presented subjects with hypothetical scenarios describing two possible actions that are both attractive and have undesirable consequences if committed and the subject were caught (drinking and driving and cheating on a college test). We also measure many of the factors that previous theorists and researchers have suggested causally link affect with self-defeating behaviors. In the following section, we describe our method and then present our results.

Methods

Sample

Subjects were undergraduate students in classes at a public university. The classes selected were courses that fulfilled one of the requirements for the

undergraduate curriculum core courses so that it consisted of students from a variety of majors. The mean age of the sample was 19.3 years ($M = 19.0$), 51.3 percent were male, and the racial/ethnic distribution was 57.1 percent White, 16.6 percent African American, 3.6 percent White Hispanic, 3.6 percent non-White Hispanic, 12.8 percent Asian American, and 6.2 percent other. All respondents present in class on the day of data collection were included, and there were no refusals. A total of 498 students completed the questionnaire. While we acknowledge that there is limited generalizability with a student sample, university students as subjects are common research subjects in psychology, behavioral economics, and in rational choice criminological studies.

Procedure

Subjects in each class were randomly given one of three questionnaires.⁴ Each questionnaire was identical except for the content of the mood induction procedure. In the positive affect condition, subjects were asked to:

recall the most intense, emotionally positive event or experience that occurred to you within the past five years. The event recalled has to be very specific (i.e., it has to have had occurred in a specific place and time and it had to have lasted several minutes or hours but not more than a day). Think about that event for one or two minutes and to try remember it as clearly as possible before going on to the next part of the questionnaire.

Subjects were asked how long ago the event occurred and then were given the following instruction asking them to write a one-page narrative describing the event:

Thinking about this experience we want you to write a paragraph or two about it. Include the following in your paragraph: What was the event? What about it made you feel happy, what made it such an intense experience? Describe in as much detail as possible the exact feelings and thoughts that you had at the time. Was it a kind of happiness or good feeling that you just thought about or did you feel it also? Describe these physical feelings and mental thoughts. Do you think about that event much now?

This type of mood induction, an autobiographical recall, is a commonly used technique to prime different affective states in study subjects (Brewer, Doughtie, and Lubin 1980). The same procedure was used to prime a negative affect with subjects told to recall "the most intense, emotionally negative event or experience that occurred to you within the past five years." In

the neutral affect condition, subjects were simply asked to write a one-page narrative with the following instruction:

Recall the favorite book that you read in either high school or college. Thinking about this book we want you to write a paragraph or two about it. Include the following in your paragraph: What did you like most about this book? Where there things you didn't like about the book? What did you learn from this book, and how have you applied it to your life since reading it?

The three questionnaire conditions (positive, negative, and neutral affect) were randomly sorted before distribution to the two classes. There were 160 students (32.1 percent of the total) in the positive affect condition, 170 (34.1 percent) in the negative affect, and 168 (33.7 percent) in the neutral affect condition.

We tried to encourage those in the positive affect condition to think of something "happy" with resulting "good feelings" and those in the negative affect to think of something that was "negative" and that made them "feel bad." Again, whether these induced affective states are emotions or moods are less important to us in this project since rational choice theorists have downplayed both. We were able to identify some of the positive and negative feelings that were primed in our manipulation check described subsequently. We also acknowledge that in the neutral condition, subjects may have recalled good or bad feelings associated with a favorite book, but we would expect feelings associated with a book to be more mild than either the positive or negative conditions, and if a mood state was elicited by our neutral condition our observed results will be conservative.

In addition to priming either positive or negative affect, we asked respondents to "rate the memory you have of this one experience" in terms of four dimensions: vividness, detail, intensity of the image, and the intensity of the feeling they were having. Response options ranged on a six-point continuum from vaguely (vivid, detailed, intense image, intense feeling) to very. These four items loaded on one factor with factor loadings from .75 to .88, and the items had a Cronbach's α of .85, with higher scores on the regression-based factor scale indicating a more vivid, detailed, and intense mood. We created a factor-score scale of affect intensity with these items.

Dependent Variable

Our outcome variables are the self-reported intention to engage in two harmful behaviors. Subjects were asked to read two hypothetical scenarios,

one pertaining to cheating on a school test and the second to drinking and driving (the wording for both scenarios can be found in Appendix). After reading the cheating scenario, subjects were asked, "what is the chance that you would take the exam from your friend and study from it?" After reading the drinking and driving scenario subjects were asked, "how likely are you to drive home under these conditions?" Subjects provided probability estimates for both questions at 10-point intervals ranging from 0 percent (no chance) to 100 percent (chance). Self-reported intentions to offend in response to a hypothetical scenario have been shown to be a good proxy for actual offending, being moderately correlated with actual behavior (Pogarsky 2004), and while not as common as either official or self-reported measures of offending in criminology it is a very common way to measure offending within the community of rational choice researchers. The distributions for each dependent variable are shown in Figure 1 (descriptive statistics in Table 1, panel A), and it can be seen that the responses are censored at zero. About 23 percent of the respondents reported that there was a zero chance that they would cheat on the exam, and 28 percent reported a zero probability of drinking and driving. Because of this censoring, we analyzed the data with both a logistic regression model and a censored dependent variable regression model.

Independent Variables

The literature has provided four specific causal mechanisms linking an individual's affective state and their involvement in self-defeating behavior: (1) risk taking, (2) time preference, (3) decision-making style, and (4) attitudes such as impulsivity and self-confidence. We measured three of these hypothetical causal mechanisms (we have no direct measure of a subject's time preference). With respect to risk taking, we have two measures of *perceived risk of apprehension* for self for each scenario condition. For cheating the two items were "Estimate the chance from 0 percent (you'd get away with it) to 100 percent (you definitely would get caught) that you would get caught if you were to take the exam and study from it," and "What do you think would be the chance that your professor would find out and you would be caught or your friend would tell the professor that he gave it to you?" (with response options from 0 percent to 100 percent chance). For drinking and driving the two questions were "Estimate the chance from 0 percent (you'd get away with it) to 100 percent (you definitely would get caught) that you would get caught if you were to drive home under those conditions," "If you were to drive home that night,

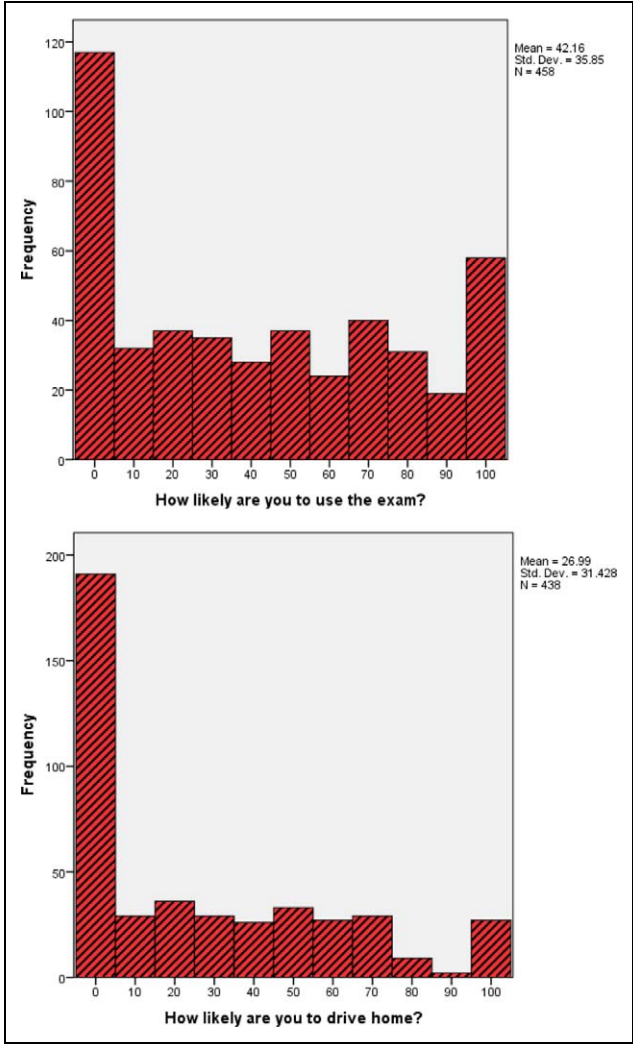


Figure 1. A, Self-reported intentions to cheat on the exam. B, Self-reported intentions to drink and drive.

what do you think your chances are that you would be stopped by the police?” These measures of the perceived risk of apprehension are fairly standard indicators of the perceived certainty of punishment for misconduct, what we are calling risk.

Table 1. Descriptive Statistics and Correlation Coefficients for Independent and Dependent Variables for Cheating (Cheat) and Drinking and Driving (DD).

A. Descriptive Statistics for Cheat and DD										
	Mean	SD	Min	Max						
Positive affect ^a	.316	.465	0.00	1.00						
Negative affect ^a	.336	.473	0.00	1.00						
Intensity of affect	.000	1.000	-4.45	.99						
Perceived risk—cheat	100.694	46.669	0.00	200.00						
Perceived risk—DD	104.855	40.892	0.00	200.00						
Intuitive reasoning ^a	.366	.482	0.00	1.00						
Cognitive reasoning ^a	.096	.294	0.00	1.00						
Thoughtful reflection	.000	1.000	-4.76	2.21						
Confidence—cheat	5.011	1.496	2.00	8.00						
Confidence—DD	5.080	1.616	2.00	8.00						
Impulsivity	.000	1.000	-1.08	2.15						
Binary intention to cheat ^a	.747	.435	0.00	1.00						
Continuous intention to cheat	42.230	35.925	0.00	100.00						
Binary intention to DD ^a	.566	.496	0.00	1.00						
Continuous intention to DD	27.060	31.355	0.00	100.00						
B. Correlation Matrix for Cheating (above Diagonal) and Drinking and Driving (below Diagonal)										
	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
x1—Positive affect		-.479	.064	-.031	-.024	.048	.005	-.098	.044	.024
x2—Negative affect	-.484		-.036	.036	.059	.065	.082	.096	-.011	-.020
x3—Perceived risk	.047	-.030		.050	.026	-.006	-.360	-.134	-.343	-.259
x4—Intuitive reasoning	-.039	.038	.059		-.244	-.028	-.012	-.001	.041	.052
x5—Cognitive reasoning	-.021	.063	.007	-.247		.010	-.001	-.093	.005	-.016
x6—Thoughtful reflection	.061	.054	-.016	-.032	.016		.052	-.203	-.146	-.181
x7—Confidence	.011	.078	-.362	-.015	.008	.060		.072	.325	.238
x8—Impulsivity	-.098	.100	-.137	-.004	-.083	-.208	.068		.165	.153
x9—Intention—binary	.022	-.001	-.280	-.043	.077	-.056	.330	.021		.685
x10—Intention—continuous	.039	.039	.012	-.360	.031	.029	-.107	.321	.009	.756

^a These are dichotomous variables, so the mean represents the proportion of respondents who possess that particular characteristic.

We have two different measures of a person's decision-making style. One is the extent to which they make decisions intuitively and without much thought. Frederick (2005) developed a three-item scale of what he calls *cognitive reflection*. A sample item is "A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost? _____ cents)." While the correct answer is 5 cents, someone who responds quickly with their intuition rather than slowing down to think about it would respond with 10 cents. Respondents who provide the intuitive answer to all three questions were deemed "intuitive," those who responded with all three correct answers were deemed "cognitive," while those who provided mixed answers were the reference category in a two-dummy variable scheme. The second measure of one's decision-making style comes from Paternoster and Pogarsky's (2009) notion of *thoughtfully reflective decision making* which captures a deliberative, rational-based style of making decisions. The scale includes four items (e.g., when you have a problem to solve, one of the first things you do is get as many facts about the problem as possible.).

Response options ranged for each item on a four-point continuum from strongly disagree to strongly agree. A factor analysis indicated that all four items loaded on one factor (with factor scores from .59 to .76) and the scale had a Cronbach's α reliability of .63.

Two indicators of attitude sets that have been suggested to be related to affect and its consequences were measured. We used two items to measure the respondent's self-confidence in their own ability to escape detection if they were to commit the offense described by each scenario. Subjects were asked (1) "Compared to most people, how much worse or better do you think you would be in avoiding getting caught if you were to (commit the act described in the scenario)?" and (2) "If you were to (commit the act described in the scenario) and you got away with it, how much would your own personal skills and abilities have to do with the fact that you got away with it?" Response options for the first item were "a lot worse than most people," "a little worse than most people," "better than most people," and "a lot better than most people." Response options for the second item were "my own skills/abilities would have nothing to do with it," "a little something to do with it," "something to do with it," and "a great deal to do with it." The items were combined into an additive scale with higher scores reflecting greater *confidence*. Cronbach's α was .54 for confidence in cheating and .64 for drinking and driving. The second attitude set we measured was *impulsivity*, which was created from five items: (1) I plan tasks carefully, (2) I act on the spur of the moment, (3) I stop and think things

over before doing anything, (4) I would you do almost anything on a dare, and (5) I do things without thinking. Response options for each option were either yes or no. Factor analysis indicated that a one-factor model fit the data well with factor loadings from .51 to .82, and the scale had a Cronbach's α of .70. Higher scores on the scale reflect higher levels of impulsivity.

The descriptive statistics for the dependent and independent variables are shown in Table 1, panel A, and Table 1, panel B reports the zero-order correlation coefficients among all variables for cheating (above the diagonal) and drinking and driving (below the diagonal). It should be noticed that the cluster of cognitive variables (reasoning style, thoughtful reflection, confidence, and impulsivity) is generally quite independent. The highest correlations are between perceived risk and confidence, and these are very modest ($r < .37$). This is consistent with Frederick's (2005) previous findings that cognitive reflection is only modestly related to various measures of intelligence and risk preference, and other research which shows that cognitive complexity is unrelated to intelligence (Ceci and Liker 1986).

Results

We first checked if randomization of the data collection instrument successfully achieved comparability across the three "treatment" conditions—positive affect, negative affect, and neutral. Table 2 presents some information about the characteristics of our sample across the three treatment conditions. The three groups were comparable on respondents' age, gender, the number of semesters in college, grade point average, and race. One exception was that there were significantly more Asian students in the positive affect group than in the neutral condition. This presents no problem for the subsequent analyses, however, since Asian students were no more or less likely than students of other races to report that they would cheat or drive while drunk.

The second issue concerns whether or not we were successful in creating positive and negative affect with our mood induction procedure. After asking students to think and write about an intense emotional event (positive or negative) or their reaction to their favorite book (neutral), they responded to a series of questions about their current mood. The instructions were "Here is a list of words that describe feelings people have. Please read each word carefully. Then circle the answer which best describes HOW YOU ARE FEELING RIGHT AT THIS MOMENT." The 10 selected words included those that measured positive (happy and cheerful) and negative (sad)

feelings as well as feelings that were irrelevant to the mood manipulation (hopeful, regretful, and lively). The responses were arranged from zero ("not at all") to four ("extremely"). Table 3 reports the results of a series of one-way analyses of variance to see if the mood induction procedure successfully primed positive and negative affect.⁵ Of immediate interest is the fact that subjects in the positive affect condition reported being significantly more happy and cheerful than those in the negative affect condition, and those in the negative affect condition reported being significantly more sad than those in the positive affect condition. Those in the negative affect condition were also significantly more likely to have reported being tense, worthless, and bitter than those in the positive affect condition.⁶ If the purpose of the autobiographical reconstruction of an emotionally intense event was to create variation in affect among our respondents, we think this has been achieved. The differences created by our mood induction seem wide sweeping and general enough to warrant the monikers—positive and negative affect.

We move now to the question as to whether or not there is a relationship between affect (positive or negative) and a self-reported intention to cheat on an examination or drink and drive. Since Figure 1A and B shows quite clearly that the two willingness to offend (WTO) outcomes are highly skewed, we analyze the data first as a pair of binary outcomes in a logistic regression and then as a censored dependent variable (Tobit) regression. With respect to the binary outcomes, we found that while there was a very slight tendency for those in the positive affect condition to report that there was a nonzero probability to cheat and drive while drunk, the differences across the three conditions are very small and not significantly different from zero. For example, the unconditional probability of any respondent reporting that there was a chance that they would cheat on the exam was about 75 percent. It was approximately 77 percent for those feeling positive affect, 74 percent for those feeling negative affect, and 75 percent in the neutral condition (see Figure 2). The same was true for drinking and driving, where approximately 60 percent of those in the positive affect condition reported that there was a chance that they would drink and drive, 55 percent of those in the negative affect, and 56 percent in the neutral condition. These null findings are confirmed by two bivariate logistic regression results. With the positive and negative affect conditions entered as two dummy variables (the neutral condition as a reference), the coefficients for positive affect are positive and nonsignificant for both cheating ($b = .123$) and drinking and driving ($b = .151$) and negative and nonsignificant for both ($b = -.033$) cheating and ($b = -.024$) drinking and driving in the

Table 2. ANOVA Results Examining Respondent Characteristics across Three Conditions.

Characteristic	Affect Condition			<i>p</i> Value
	Positive	Negative	Neutral	
Age	19.31	19.52	19.11	.383
Male	.49	.55	.50	.448
# of Semesters in College	3.30	3.49	3.02	.192
Grade Point Average	3.30	3.20	3.33	.071
White	.54	.59	.59	.560
African American	.14	.15	.21	.192
Hispanic	.08	.06	.07	.806
Asian	.18	.12	.09	.039 ^a
Other	.06	.08	.05	.549

Note: ANOVA = analysis of variance.

^a In a post hoc Tukey's honestly significance difference test the positive affect group had significantly more Asian respondents than the neutral group.

negative affect condition. When we retain the two willingness to offend measures as continuous variables and estimate Tobit models, we also find that there is no significant relationship between either positive or negative affect and cheating or drinking and driving. For cheating the Tobit coefficients for both positive and negative affect were positive ($b = 4.408$ for positive and $b = .780$ for negative affect), while for drinking and driving the Tobit coefficient for positive affect was positive ($b = 1.507$) and negative for negative affect (-2.484). In no case, however, were any of the coefficients significantly different from zero.

Our failure to find an effect for either positive or negative affect on the self-reported intention to cheat or drive drunk may be due to the fact that the mood induction procedure we employed, having students write about a recent intensive emotional experience or event, might not have been able to generate a strong dose of affect. While our manipulation check did indicate that those in the positive affect condition felt significantly happier and cheerful, and those in the negative affect condition were significantly sadder, the magnitude of the mood may not be strong enough with a request to reconstruct a past event. We used the intensity of felt affect measure we had created and interacted this intensity measure with our measured affect variable to create two dummy variables of intense positive mood (coded as 1 with all other scores as 0; $N = 83$) and another reflecting intense negative mood (coded the same way; $N = 82$).

Table 3. ANOVA Results for Self-reported Feelings across Three Conditions.

Are You Feeling?	Affect Condition			p Value
	Positive	Negative	Neutral	
Hopeful	2.29	1.99	2.11	.098
Stressed	2.07	2.14	2.02	.673
Happy	2.51	2.02	2.32	.001 ^a
Tense	1.52	1.80	1.41	.009 ^b
Sad	.81	1.25	.72	.000 ^a
Regretful	.86	.99	.81	.335
Cheerful	2.01	1.54	1.88	.003 ^a
Worthless	.38	.36	.17	.017 ^a
Lively	1.99	1.60	2.03	.004 ^a
Bitter	.49	.80	.54	.017 ^c

Note: ANOVA = analysis of variance.

^a The positive affect and neutral group were significantly different from the negative affect group.

^b The negative affect group was significantly different from the neutral group.

^c The negative affect group was significantly different from the positive affect group.

The measure of intense positive mood is inversely related to both the binary coded self-reported intention to cheat and to drink and drive and in both cases the bivariate logistic regression coefficient was significantly different from zero ($b = -.487, p < .05$ for cheating; $b = -.497; p < .02$ for drinking and driving). Compared with all other respondents, those who reported an intense positive affect were significantly *less* likely to report that they would cheat on the exam or drive while drunk. Having an intense negative affect was unrelated to either cheating or drinking and driving.⁷ When intentions to cheat or drink and drive are kept in their original continuous coding, the Tobit coefficients for intense positive and negative affect were unrelated to cheating, but an intense positive affect was significantly and inversely related to intentions to drink and drive ($b = -.12.138, p < .01$). It would appear, therefore, that when we take into account the intensity of the affect, those experiencing an intense positive feeling were significantly less likely to report that they would cheat on an examination or drink and drive in the binary coding (logistic regression) model and once above the zero threshold were also significantly less likely to drink and drive in the censored normal (tobit) model.

We now turn to uncovering some of the possible causal mechanisms linking a strong positive affect with reduced intentions to cheat and drive

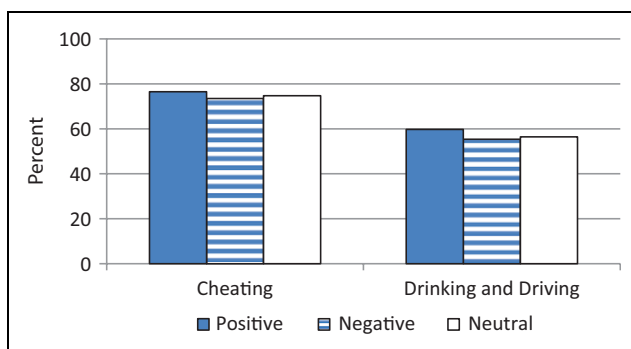


Figure 2. Probability of cheating and drinking and driving across affect conditions.

drunk.⁸ In Table 4, we report the results of the logistic regression model discussed in the previous paragraph with intentions to cheat and drink and drive first regressed only on intensive positive and negative affect. In successive models, we add separately the variable measuring one of the hypothesized causal mechanisms linking affect to offending and culminate in a final model that includes all of the cognitive factors. Considering cheating, model 1 shows the baseline model where those reporting an intense positive affect were significantly less likely to report an intention to cheat on an exam. When perceived risk (model 2), cognitive reflection (model 3), and impulsivity (model 6) are each added to the model, there is virtually no effect on the relationship between an intense positive affect and cheating. In each of these cases, the magnitude of the coefficient for positive affect varies very little and continues to be significantly negative. When thoughtfully reflective decision making (TRDM) is included in the model, the relationship between intense positive affect is no longer significant at a traditional level ($p = .09$) but the magnitude of the coefficient is diminished by only 16 percent. When the measure of the respondent's self-confidence is included (model 5), the coefficient for intense positive affect is reduced to nonsignificance as well, but again the magnitude of the reduction is quite small, only 6 percent. When, however, all of the cognitive factors are included (model 7), the estimated parameter for positive affect is reduced to nonsignificance and is diminished by about 25 percent. It would appear, then, that the inhibiting effect of intensive positive feelings on cheating is mediated by thoughtfully reflective decision making and self-confidence; positive affect reduces one's self-reported intention to cheat through cognitive factors. There continues to be a direct effect of perceived risk in inhibiting cheating

(consistent with deterrence/rational choice theory) and inhibition through more thoughtful and deliberative decision making (TRDM). Consistent with recent research in both economics (Barber et al. 2013) and criminology (Loughran et al. 2013), being overly confident is positively related to behaviors like cheating and drinking and driving which may be beneficial in the short term but harmful in the long term.

Looking at the bottom panel of Table 5, we can see that, similar to the case for cheating, in terms of the binary **measure a positive affective feeling is significantly related to a reduced risk to drink and drive**. However, when considered individually, none of the predicted intervening causal factors reduce this relationship to nonsignificance, and the magnitude of the coefficient for intense positive affect is virtually unchanged from model 1 to model 6. Moreover, with the exception of cognitive reflection (cognitive vs. intuitive reasoning), each of the cognitive factors has an independent effect on intentions to drink and drive. When all of the cognitive factors are included in the logistic regression model (model 7), there is only partial mediation of the effect of intense positive affect. The magnitude of the estimated parameter reduced by only 11 percent is significant.

We repeat this analysis with the continuous measures for intentions to cheat and drink and drive in the Tobit analyses reported in Table 5. With respect to cheating our earlier results indicated that intense positive affect had no effect on intentions to cheat and this is confirmed in model 1 in Table 5. While the relationship between intense positive affect and cheating is negative, it is not significantly different from zero. When the measures of risk (model 2), decision-making style (model 3), and impulsivity (model 6) are entered into the model, the magnitude of the Tobit coefficient for affect is not changed to any substantial degree. When confidence is brought into the model, the coefficient for positive affect continues to be nonsignificant and the magnitude is reduced by 18 percent. When thoughtful decision making is included, the magnitude is reduced by 28 percent. Finally, with all of the cognitive factors included in the model, the coefficient estimate for intense positive affect is reduced by 60 percent from the baseline model.

The baseline model shows that the relationship between intense positive affect and drinking and driving in the Tobit model is negative and significant (model 1; $p < .01$). There is only one instance though where this relationship declines in any meaningful way. When confidence is included in the model, the significance level for intense positive affect reduces to $p < .05$ and the magnitude of the Tobit coefficient declines by about 16 percent. When all cognitive factors are considered in the same model (model 7), there is partial mediation of the effect of intense positive affect

Table 4. Logistic Regression Results for Binary Intentions to Cheat and Drink and Drive.

Cheating	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intensive positive affect	-.487*	-.501*	-.481*	-.410	-.457	-.548*	-.370
Intensive negative affect	-.057	-.044	-.058	.036	-.173	.012	-.059
Perceived risk		-.012***					-.010***
Intuitive reasoning			.249				.378
Cognitive reasoning			.317				.243
TRDM				-.339**			-.440***
Confidence					.328***		.269**
Impulsivity						.387**	.232*
Constant	1.091	2.361	.973	1.107	-.472	1.141	.855
Drinking and driving	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intensive positive affect	-.497*	-.492*	-.496*	-.464*	-.447*	-.516*	-.441*
Intensive negative affect	-.160	-.174	-.158	-.151	-.258	-.204	-.293
Perceived risk		-.020***					-.016***
Intuitive reasoning			.153				.358
Cognitive reasoning			.272				.268
TRDM				-.162			-.115
Confidence					.425***		.278***
Impulsivity						.021	.152
Constant	.267	2.430	.185	.272	-1.875	.269	.471

Note: TRDM = total radiation dose monitor.

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

in reducing the risk of drinking and driving. The magnitude of the Tobit coefficient declines by 16 percent. The censored continuous measure of the risk of drinking and driving is also inhibited by the perceived risk of punishment and one's level of confidence. These findings are consistent with other recent studies on the role of thoughtfully reflective decision making (Paternoster and Pogarsky 2009; Paternoster, Pogarsky, and Zimmerman 2012) and self-confidence (Loughran et al. 2013).

Discussion

Although some criminologists have devoted a great deal of their attention to the role of emotion and strong affect in crime (particularly anger), notably, Agnew (2006), Giordano et al. (2007), and Katz (1989), rational choice criminologists have with some notable exceptions (Cornish and Clarke 1986, 2008; Wortley 2008) tended to treat affect as epiphenomenal. This is somewhat surprising since an abundant literature in psychology has suggested that while emotions may be very action oriented, moods are more likely to affect cognitions—how information is collected or processed. As Giordano et al. (2007) have recently shown with respect to the reworking of emotional identities and desistance, affective states like moods may be related to criminal offending indirectly by creating a situational context within which information may be distorted, ignored, improperly weighted, or otherwise mishandled. In a recent article, Wortley (2008) has argued that situational factors in the immediate environment (other than the risk of punishment) may impact the propensity to commit crime. These situational factors are provocations or precipitating stimuli that precede the decision to offend and may include affective states like emotions and moods. Wortley (2008:49) describes a situation where a patron at a bar spills another customer's drinks which leads to an altercation but if "the night up until then had left Jim in a good mood, he would have been much more inclined to accept the spilling as an accident."

The finding in our article that an intense positive mood inhibits two harmful behaviors, cheating on an exam and drinking and driving, provides support for Wortley's conjecture and indirect support for the important role of emotions discussed by Giordano et al. (2007). While Wortley spoke mainly in terms of situational motivators to crime, the rational choice perspective would also benefit from identifying the situational inhibitors of offending. A favorable affective state can lead to a benign result by a differential interpretation of cues (the person who made me spill my drinks is really a nice person and it was an accident) or a better processing of the

Table 5. Tobit Regression Results for Binary Intentions to Cheat and Drink and Drive.

Cheating	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intensive positive affect	-4.099	-4.379	-4.047	-2.939	-3.323	-4.011	-1.635
Intensive negative affect	-3.599	-3.037	-3.674	-1.614	-5.686	-.057	-2.739
Perceived risk		-.322***					-.259***
Intuitive reasoning			6.374				8.119
Cognitive reasoning			7.424				7.657
TRDM				-6.667**			-7.127***
Confidence					9.900***		7.618***
Impulsivity						8.149***	4.191*
Constant	35.387	67.891	32.335	35.099	-13.663	35.662	20.395
Drinking and driving	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intensive positive affect	-12.138**	-11.717**	-12.268**	-11.452**	-10.202*	-11.765**	-9.805*
Intensive negative affect	1.791	1.349	1.906	2.062	-1.194	1.153	-1.206
Perceived risk		-.457***					-.319***
Intuitive reasoning			-.168				2.520
Cognitive reasoning			9.778				10.442
TRDM				-3.678			-1.078
Confidence					11.307***		8.001***
Impulsivity						1.744	.857
Constant	11.724	58.891	10.829	11.767	-46.132	11.845	1.965

Note: TRDM = total radiation dose monitor.

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

information at hand. Wortley's suggestion that rational choice theorists should broaden their conceptual framework to consider the immediate context of a potential criminal offense, including the affective state of the actor, is consistent with a more general call to criminologists to consider the situational factors of crime about 20 years ago by Birkbeck and LaFree (1993). They suggested (1993:116) that one way that immediate environments can be linked to crime is that "they can be considered as relatively short-term influences on the disposition to commit crime. For example, progressive exhaustion generated by a large number of interactions with children [a negative affective state] may lead to a shift from verbal to physical tactics of parental control in the household." Similarly, a large number of positive interactions may generate a positive affective state or become manifested in a pro-social identity that may subsequently serve to inhibit any violent interactions. In sum, rational choice theory should expand its conceptual turf to consider the role that affective states (both positive and negative) may play in the processing and collection of information and the making of better or worse decisions.

We think future research could move along three directions. First, samples other than college students would go a long way toward increasing the generalizability of our findings. One clear limitation of our research, and we would concede deterrence/rational choice theory at the individual level in general, is that it uses availability samples. Second, it would be useful to experiment with other ways to prime mood or emotion induction. While autobiographical narratives are reasonable, other mechanisms may be more effective in inducing stronger affective states. Finally, it seems important for criminologists to move beyond affective states as personality traits toward Wortley's (2008) suggestion that they can serve as situational motivators and well as inhibitors to crime. This would be both an important extension of rational choice theory but criminological theory in general.

Appendix

Cheating Scenario

Suppose you are taking a course in your major, and it's a required course so you have to get a C in the class or you will have to repeat it. The course is only offered once a year in the spring semester. Suppose also it is the spring semester of your senior year and you are scheduled to graduate in May. Up to the final exam, you have a 60 average on your tests in this class and without a high B on the final you will not get a C and will have to wait for a year

to repeat the class. You don't have high hopes that you will get a B on the final since it is a very difficult class and you never got a B on any previous test. A day before the exam a friend of yours who is also in the class says that he went to see the professor to ask him a question, but when he got there the professor was not in his office but his door was open. Your friend said that there was a large box on the floor next to the professor's desk that had copies of the final exam in it ready to go the next day (there are more than 200 people in your class). Your friend said he took one of the exams and left the office before the professor came back. Your friend says that you can look at the test and make a copy of it if you want and study from it.

Drinking and Driving Scenario

Please imagine a situation in which you drove by yourself one night to meet some friends at a bar. The bar is located approximately 10 miles from your apartment. You have been casually drinking throughout the evening (for about four or five hours), and now you are ready to leave. You also remember that you have to be at work early the next morning, and your boss will have a fit if you are late. You can either drive home yourself or find another ride. However, if you find another ride tonight and leave your car, you will have to return early the next morning before work to pick it up.

For the purposes of this hypothetical situation, assume that at this point you are "on the margin" of legal intoxication, meaning your blood alcohol level has just barely exceeded the legal limit. However, if pulled over assume you will definitely fail a breathalyzer test, meaning you will be subject to a penalty. If you are pulled over and found to be intoxicated, you will be forced to spend the night in jail, pay an appropriate fine, and likely get some points on your driving record.

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Notes

1. Emotions play a central role in general strain theory, defiance theory, and social learning theory. For a comprehensive discussion of the role of emotion in crime, see Bensen and Sams (2013).
2. Some rational choice theorists have regarded emotional states as an integral component of the theory. For example, early on Cornish and Clarke (1986) included “temperamental factors” in the mix of influences on the decision to commit crime, and in more recent work (Cornish and Clarke 2008) have argued that rational decisions to commit crime frequently have an emotional context (see also Tibbetts 1997). Cornish and Clarke also include emotional states as a goal or an object of criminal activity, such that feelings of pleasure or revenge are outcomes of rational decision making. Further, as we will note later in the article, in a number of works, Wortley (2008) has suggested that emotional states serve as a prompt, provocation, or precipitator of criminal offending. We would also note that in recent years both supporters and critics of the rational choice perspective have suggested the inclusion of emotional states into the perspective, and this work is currently well underway (DeHaan and Vox 2003; Hayward 2007). Finally, Giordano et al. (2007) have included emotions and emotional identity as a component on their recent symbolic interactionist theory of desistance from crime.
3. Some scholars have taken pains to distinguish affect from emotions (Forgas 2000, 2002), while others seem to treat them as virtually the same thing using the terms interchangeably (Loewenstein and Lerner 2003), and even among those who distinguish affect from emotion there is no real consensus as to exactly how they are different. Batson, Shaw, and Oleson’s (1992:295) description is very much still valid: “most often, the term affect, mood, and emotion are used interchangeably, without any attempt at conceptual differentiation.”
4. The randomization was done as follows. Five hundred instruments were initially copied and placed in one stack. A random number from 1 to 500 was then selected and the instrument corresponding to that number was selected and placed first in a new stack that was to be distributed to subjects. A second random number from 1 to 450 was then selected, this process was continued. If a number was selected more than once it was ignored and a new random number selected.
5. The measure of mood was on a four-point rating scale. When we analyzed the data as categorical with χ^2 tests of independence, the results were the same as those for the analysis of variance.
6. We were more successful in manipulating negative than positive mood. In each case, but two (feeling tense and feeling bitter), the positive and neutral groups were significantly different from those in the negative affect condition, but not different from each other. For feeling tense, those in the negative affect condition were

different from those in the neutral condition, while for feeling bitter those in the negative affect condition were different from those in the positive affect group.

7. In an analysis of variance that included a three-level variable with values, high-intensity positive effect, high-intensity negative effect, and all others, there was no evidence of a nonlinear *U*-shaped effect for affect on behavior described earlier.
8. In the analyses that follow, based upon previous research we discussed earlier in the article, we conceive of these cognitive measures (thoughtfully reflective decision making, cognitive reflection, etc.) as mechanisms that mediate the relationship between affect and offending. Since we do not have true temporal control in our experiment, however, the possibility exists that these measures capture time-stable cognitive factors that differ between subjects. These cognitive factors may then be conceived as proxies for criminal propensity. If they do proxy for low self-control or some other manifestation of criminal propensity, then the observed relationship between mood and intentions to offend may be spurious. It is also a reasonable interpretation to think that the relationship between mood and cognitive factors is one of moderation rather than mediation and that mood interacts with cognitive factor (we thank a reviewer of our article for these suggestions). Although we think we have made an equally reasonable case for mediation, we remind readers here of these alternative interpretations of our findings.

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