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# Status Gains versus Status Losses: Loss Aversion and Deviance

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## ABSTRACT

The relationship between associating with (non)deviant peers and one's own delinquent tendencies is often attributed to the motivation for positive reinforcement and status attainment. Guided by prospect theory and loss aversion, we assert that there is an alternative mechanism through which individuals conform to peer influence – to prevent loss of status for not conforming to the peer group. We surveyed over 1,200 college students at multiple universities across the United States and randomly provided them with hypothetical scenarios related to fighting, driving drunk, and using marijuana where the social consequences were framed as either gains or losses in status. Respondents reported a greater willingness to engage in both deviance and non-deviance when the social consequences were framed as status losses compared to status gains. Our findings are supportive of loss aversion and we advocate for further research that merges individual decision making and peer influence.

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Prospect theory; peer influence; loss aversion; status

*"We suffer more, it has already been observed, when we fall from a better to a worse situation, than we ever enjoy when we rise from a worse to a better."*

-Adam Smith (1790 [*The Theory of Moral Sentiments*])

## Introduction

Decades of empirical work using survey data has demonstrated that associating with delinquent peers is one of the strongest and most robust correlates of offending (Warr, 2002; see also Pratt et al., 2010). Further, recent experimental work employing both laboratory (Gardner & Steinberg, 2005; Paternoster, McGloin, Nguyen, & Thomas, 2013) and vignette (McGloin & Rowan, 2015) designs have shown that deviant peer influence is associated with substantial increases in the willingness to engage in risky or deviant conduct. Recently, scholars have suggested that insights into the mechanisms of social influence can be gained by incorporating peer processes into decision

making frameworks (Hoeben & Thomas, 2019; McGloin & Thomas, 2019). Such an approach would view peers as influencing behavior by providing (dis)incentives for engaging in crime (or conformity), which is logically consistent with theoretical perspectives that highlight social status as an important consideration of potential offenders. Indeed, a cursory review of the literature suggests that group conformity is often attributed to “enhancing status” (Anderson, John, Keltner, & Kring, 2001; Cohen, 1977; Osgood, Wilson, O’Malley, Bachman, & Johnston, 1996; Ridgeway, 1978, 1982), “gaining social acceptance” (Coie et al., 1990), and “positive reinforcement” (Akers, 1998; Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994). The implication would seem to be that many scholars hold the belief that individuals choose to conform to group pressures in the hopes of gaining status or respect among peers.

Yet, more recent developments in the decision making literature suggest an alternative possibility: that individuals may conform to the group not necessarily to *gain* social status, but to prevent their friends from *losing* respect for or thinking less of them. The idea that the threat of losing status is more salient than the potential to gain status is consistent with prospect theory and the well-established principle known as loss aversion. Prospect theory is a model of decision making under risk developed as an alternative to the standard expected utility model (Kahneman & Tversky, 1979; see also Piquero, Paternoster, Pogarsky, & Loughran, 2011; Thomas & Loughran, 2014). Loss aversion—the idea that individuals tend to prefer avoiding losses to acquiring equivalent gains—is one of the most widely documented systematic departures from the expectations of the standard economic model (Kahneman & Tversky, 1979), and has been shown to manifest in several ways that help account for anomalies in traditional expected utility theory (Camerer, 1998). For example, research has shown that gamblers and racetrack bettors are more likely to make high-risk bets after experiencing losses (Ali, 1977; Jullien & Bernard, 1997), that many individuals invest in “safe” yet low returning stocks (as opposed to more risky stocks with higher expected returns) in order to avoid the possibility of a loss (Bellemare, Krause, Kröger, & Zhang, 2005), and that individuals often refuse to cut consumption when wages are reduced despite the negative effects on lifetime savings (Bowman & Rabin, 1999; Shea, 1995). Indeed, overall “there is strong evidence that framing [incentives] as losses impacts behavior more than comparable gains” (Romanowich & Lamb, 2013, 2085).

Loss aversion has rarely been applied to social status or peer influence directly. Nevertheless, some empirical observations in criminology suggest that aversion to status losses may be a salient underlying mechanism in group conformity. For example, Warr (2002, 46–47) suggested that “the mere *risk* of ridicule may be sufficient to provoke participation in behavior that is undeniably dangerous, illegal, and morally reprehensible” and “avoiding ridicule, it seems, is a stronger motivator for deviance than a desire to ingratiate it” (emphasis in original; see also Costello & Hope, 2016). Further, seminal work conducted by ethnographers, such as Anderson (1999) and Short and Strodbeck (1965), have also observed that a primary motivating factor for engaging in deviance is a fear of losing status. To date, we are not aware of any empirical tests directly examining whether individuals conform to group pressures to engage in delinquency (or not) primarily in order to gain social status or from fear of losing social

status for not conforming. To address this gap, we examine if framing social consequences as status losses weigh more heavily on individuals' decisions than consequences framed as status gains. We rely on samples of college students at multiple universities, and examine three types of deviant behaviors (fighting, driving drunk, and using marijuana) in scenarios where the hypothetical peer group is either promoting deviant behavior or promoting non-deviance.

### Choice, loss aversion and decision making

There has been a recent influx of empirical studies seeking to advance choice and decision making in criminology. Although the bulk of this research has been framed through rational choice and deterrence perspectives (see Pogarsky et al., 2018; Thomas, Hamilton, & Loughran, 2018), explorations of how individuals use incentives to inform and guide behavior is directly relevant for a host of criminological theories. As McCarthy (2002) observed, virtually every criminological theory incorporates some element of "choice," thus, understanding decision making processes is germane for many of the field's most prominent perspectives. Indeed, most individual-level theories of crime are rooted in the fundamental idea that potential offenders consider, weigh, and respond to incentives (e.g., Akers, 1990; Hirschi, 1986), even if decision making plays only a secondary role (Nagin, 2007).

When theorists from prominent sociological traditions discuss the compatibility of their respective perspectives and "choice" they most often invoke ideas from traditional subjective expected utility theory (see McCarthy, 2002). Yet, much of the influential work assessing choice and offender decision making in recent years has been rooted in behavioral economics—and more specifically prospect theory—which stress the systematic ways in which human beings depart from standard economic theory (Kahneman & Tversky, 1979; Pogarsky et al., 2018). Notably, two important observations are relevant for the current study: reference dependence and loss aversion. First, reference dependence refers to the fact that individuals tend to value incentives from an established reference point rather than as an absolute value. That is, value is determined by the gains and losses of an action relative to the individual's current state rather than some "absolute" level of the commodity. In traditional expected utility theory, valuation is simply absolute: The \$10 increase in one's finances from \$10 to \$20 is equally as impactful as a \$10 increase from \$610 to \$620.

Second, whereas traditional expected utility models assume that gains and losses are weighted equally, Tversky and Kahneman (1979) have demonstrated that when making decisions under risk the utility function is steeper for the domain of losses relative to the domain of gains—individuals tend to be more sensitive to expected losses than to expected gains (Tversky & Kahneman, 1992). This phenomenon, known as *loss aversion*, suggests that individuals would rather avoid losses from their reference point than acquire equivalent gains from that reference point, or put more succinctly: "losses loom larger than gains" (Tversky & Kahneman, 1991). There is impressive evidence in support of the loss aversion phenomenon, with some research

even showing that losses are twice as powerful as comparable gains (Tversky & Kahneman, 1992).

Consider the following example: *What would you rather have happen?*:

- a. Find \$10 while walking down the street
- b. Avoid losing \$10 while walking down the street

Notice that the overall outcome is objectively the same in the two scenarios: A \$10 change in one's finances. Yet, individuals consistently report that they would rather avoid a loss than attain an equivalent gain. This suggests that potentially losing \$10 hurts more than the potential satisfaction of gaining \$10.

Evidence consistent with the idea that individuals are loss averse manifests in many forms.<sup>1</sup> Research on the "endowment effect" shows that individuals' maximum willingness to pay for an object that they do not already own is typically lower than the lowest amount an individual is willing to accept to give up that same object (Kahneman, Knetsch, & Thaler, 1990). The "disposition effect" shows that investors retain stocks that have lost value for relatively long periods of time but will be eager to quickly sell stocks that have risen in value (Shefrin & Statman, 1985). Research into choices for things such as healthcare and retirement plans show evidence of "status quo" bias, suggesting that there is an irrational preference favoring what one already has. Finally, examinations of consumer behavior have shown that framing something as a *surcharge* rather than a *discount* has a larger impact on consumer behavior (see Levin, Schneider, & Gaeth, 1998).

Despite the important implications of loss aversion for understanding choices, there has only been a handful of empirical work examining the impact of relative losses and gains as it pertains to criminology. Almost all of this work has been done with regards to risk and monetary rewards. For example, Piquero (2012) found that fear of failing—which serves as a reminder of potential lost finances—can be a strong motivator of white-collar crime, a finding that is consistent with predictions deriving from loss aversion. Further, Pickett et al. (2020) recently examined the implications of loss aversion for the study of crime and deviance using monetary crimes and a sample of adults recruited from a crowdsourcing website. They found little support for the idea of loss aversion as it pertains to monetary benefits. However, the crowdsourced nature of their sample, who are generally well-beyond the crime-prone years, and the focus on monetary crimes limits general conclusions about the applicability of loss aversion in criminology. Thus, while the research on monetary incentives and loss aversion is somewhat mixed, other incentives—such as the potential social consequences of crime—are particularly influential in decisions to offend, particularly among adolescents, and are important to study (McGloin & Thomas, 2019; Pratt et al., 2010). Indeed, we argue that reference dependence and loss aversion may be particularly relevant for one of the key incentives associated with criminal activity: group influence.

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<sup>1</sup>Our point is that although we present loss aversion as a singular phenomenon, it manifests in human behavior in multiple ways.

## Group conformity and (non)deviant behavior

### *Social status and group conformity*

Scholars generally explain peer influences on crime using ideas compatible with “choice” (McGloin & Thomas, 2019), but have tended to assume—often explicitly in their theoretical models—that individuals choose to give-in to peer influences due to the positive social benefits that can result from acting in ways that others desire (Akers, 1998; McPhail, 1991; Thornberry et al., 1994). That is, group influence is thought to operate largely by evoking an individual to consider the social rewards and benefits of (in)action (Short & Strodtbeck, 1965). For example, in their situational explanation of peer influence Osgood et al. (1996) argued that when individuals socialize with friends in unstructured settings it makes deviance both easier and more rewarding to commit. For Osgood et al. (1996), the “more rewarding” aspect comes from the fact that offending with others can result in “*enhanced* status and reputation” (p. 639, emphasis added).

In social learning theory, Akers (1998) frequently attributes the influence that peers have on delinquency to the positive social reinforcements that deviant friends provide for such behavior (pp. 163-164). Indeed, at the heart of his theory is the idea that associating with delinquent peers increases individuals’ perceptions of the anticipated social rewards to crime: “one is motivated to break the law by the expected rewards” (Akers, 1998, p. 99; see also Burgess & Akers, 1966, 144; Akers, 1990). Thornberry’s (1987) interactional theory also asserts that “associating with delinquent peers tends to increase delinquency... through perceptions of *positive reinforcement* for delinquency” (Thornberry et al., 1994, 70, emphasis added). The emphasis on positive reinforcement provided by peers has led many scholars to suggest that deviant peer influence operates largely through individuals’ belief that engaging in delinquency can elevate social status (Agnew, 1991; Akers, 1998; Holt, Burruss, & Bossler, 2010).

Peers can also promote pro-social behaviors in individuals who are otherwise prone to deviate (Costello, 2010; see also Akers, 1998; McGloin, 2009).<sup>2</sup> Costello (2010), for example, has argued that criminologists have largely ignored the influence that conforming peers have on promoting conformity during adolescence (see also Costello & Zozula, 2018). Supportive of this notion, using survey data and simulated internet chat rooms, Teunissen et al. (2012) found that adolescents adapted their willingness to drink substantially to the pro-alcohol as well as anti-alcohol norms of their peers. Further, McGloin (2009) drew on the notion of behavioral “balance” to demonstrate that crime-prone individuals who associated with less delinquent individuals (relative to one’s own delinquency) become less deviant over time. Under the assumption that the process by which groups shape behavior is similar no matter the direction of influence, scholars have noted that individuals refrain from engaging in crime “predominately [due to] perceived or anticipated social rewards” for acting in a pro-social manner (Teunissen et al., 2012, p. 1264). Taken together, it seems that a commonly held theoretical belief is that group conformity is motivated by the hopes of *gaining* status and other social rewards.

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<sup>2</sup>There is an established literature detailing positive peer influence on a variety pro-social behavior (Berndt, 1979), such as better educational outcomes (Rambaran et al., 2017), and safer sex practices (Kapadia et al., 2012).

### ***Losas version and group conformity***

If social status can act as an incentive in a decision making calculus as suggested by many prominent theorists (Akers, 1990; Costello & Hope, 2016; see also Loughran, Paternoster, Chalfin, & Wilson, 2016; Matsueda, Huizinga, & Kreager, 2006), then we believe that insights derived from behavioral economics and prospect theory may be informative for understanding the peer-delinquency relationship. Specifically, it is possible that potential *losses* in status and respect for not following the desires of the peer group may weigh more heavily on individual decisions than corresponding gains. Indeed, the idea that individuals may choose to violate the law due to the possibility of losing status has been suggested in prior ethnographic works. Anderson (1999) noted that respect is a valued commodity among inner-city youth, but one that is easily lost. The street culture norms, then, encourage individuals to stand up for themselves and to retaliate on wrongdoers or risk losing respect from peers (see also Stewart, Schreck, & Simons, 2006). Importantly, “decent kids” who otherwise subscribe to pro-social value systems and are not inclined to violence are also aware of the risks associated with losing respect and will engage in violence to prevent such losses in status.

Short and Strotbeck’s (1965) seminal work on gang members in Chicago lends credence to the notion that concerns over the potential losses in status may weigh particularly heavy in decisions to violate social norms:

*“[I]t is our hypothesis that much of what has previously been described as short-run hedonism may, under closer scrutiny, be revealed to be a rational balance from the actor’s perspective, of the near certainty of immediate loss of status in the group against the possibility of punishment by larger society if the most serious outcome eventuates” (p. 250).*

The hypothesis put forth by Short and Strotbeck (1965) regarding how group processes can promote delinquency is consistent with loss aversion. First, Short and Strotbeck (1965) highlight that potential losses weigh heavier than potential hedonistic gains. Second, is the implication that threat of losses leads individuals to be more tolerant of the potential risks associated with offending—a principle that is consistent with prospect theory (Tversky & Kahneman, 1979).

Both Anderson (1999) and Short and Strotbeck (1965) discuss threats of status losses—and efforts to maintain status—in the “street” context, but there are reasons to suspect that aversion to losses in social status is a more general phenomenon. For example, Beyth-Marom et al. (1993) surveyed adolescents and adults about decisions to engage in deviant risk-taking behaviors. Their results indicated that negative social reactions were a commonly reported perceived consequence influencing decisions to engage in deviant behavior (or not). Negative consequences such as “my friends will not like me” and “my friends will laugh at me” were reported as being important for decisions to engage in deviance. Warr (2002) has also suggested that the potential for ridicule and rejection from peers are important motivators of behavior.

Similarly, when discussing the possible positive influence that nondeviant peers have on promoting pro-social behavior, Costello (2010) focuses primarily on the potential negative social consequences of violating social norms. She argues that pro-social peers tend to influence behavior by actively discouraging deviance. This active discouragement involves verbalizing disapproval of delinquency and threats to end the

relationship. Although Costello (2010) does not explicitly discuss the prospects of losses in status directly, it is implied in her discussion that such threats to status losses within a peer group play a role in decisions to avoid deviance. Moreover, Costello (2010) focuses almost exclusively on individuals *discouraging* delinquency rather than *encouraging* pro-social behaviors.

The idea of loss aversion is consistent with an important—although often neglected in the criminological literature—component of operant learning: punishment avoidance. Punishment avoidance is the tendency for individuals to engage in behaviors that allow them to avoid experiencing some aversive consequence. In criminology, punishment avoidance has been applied almost entirely to individuals taking steps to avoid formal detection from the police (Jeffery, 1965; Sitren & Applegate, 2007; Stafford & Warr, 1993). But the more general implications of punishment avoidance may aid in our understanding of peer influences on delinquent conduct. That is, individuals may conform to group influences not due to anticipated positive reinforcements (e.g., enhanced status), but in order to avoid experiencing a punishment for not conforming to the peer group (e.g., losing status). Indeed, some psychologists argue that what is often perceived to be positive reinforcement for a behavior is actually individuals' attempts to avoid punishments for alternative behavior (Crosbie, 1998; Hull, 1943). Finding evidence in support of loss aversion might encourage a greater focus on the threat of informal sanctions (Williams & Hawkins, 1986), social control mechanisms, and punishment avoidance as a key mechanism through which peers influence delinquency (Costello & Hope, 2016).

### **Current study**

Using a sample of undergraduate students across several universities and a randomized vignette design, we examine three hypotheses related to group influence, loss aversion and offending for intentions to engage in three different behaviors: fighting, drinking and driving, and smoking marijuana. First, drawing on the extensive research finding a relationship between peer associations and deviance, we predict that individuals randomly assigned to conditions where peers promote delinquency will, on average, report a greater willingness to offend than those assigned a vignette with pro-social peers:

*Hypothesis 1: Individuals receiving vignettes with pro-delinquent peer messages will, on average, report a greater willingness to offend than those receiving anti-delinquent messages from peers.*

Our next two hypotheses, which form the central contribution of the current study, concerns the relative influences of status gains and status losses on intentions to offend. Drawing on prospect theory and the concept of loss aversion (Tversky & Kahneman, 1979), we predict that among individuals who receive vignettes where peers promote deviance, intentions to offend will be greater when consequences are framed as losses in social status for not deviating relative to those provided vignettes where consequences are framed as status gains for deviating:

*Hypothesis 2: Among individuals provided with vignettes where peers promote deviance, framing consequences as potential losses in social status for not deviating will have stronger*



*impact on intentions to offend relative to framing consequences as potential gains in social status for deviating.*

Our third and final hypothesis predicts that individuals will be less likely to report intentions to offend when the social consequences are framed as losses in status for engaging in deviance as opposed to status gains for not engaging in deviance:

*Hypothesis 3: Among individuals provided with vignettes where peers discourage deviant behavior, framing consequences as potential losses in social status for deviating will have a stronger impact on decisions to refrain from deviance relative to framing consequences as potential gains in social status for choosing not to deviate.*

## Data

To test our hypotheses, we surveyed undergraduates at three universities located in the continental United States. Our decision to utilize a college student sample was partly out of convenience—universities provide access to a large subject pool in controlled settings that are conducive to random experiments. Beyond this, we believe that college students have qualities that make them preferred over other potential sources (e.g., crowdsourced adult samples). First, the overwhelming majority of college students are still within what is widely regarded as “crime-prone” ages (most of our sample are 18-20). One concern that can come up with tests of criminological theory is that many of the respondents in general adult samples are “out of market,” meaning that they would rarely consider engaging in criminal or deviant activity (Nagin & Paternoster, 1994). Indeed, prior research has suggested that crime tends to peak between ages 16 and 20, and that most individuals have shown clear signs of “desistance” by their mid-20s (Eggelston, Laub, & Sampson, 2004). Second, and relatedly, although college students may infrequently engage in serious forms of criminal activity, extant research suggests that they engage in some forms of deviance at similar—if not even higher—rates than their non-college peers. This is particularly true of the offenses captured in the current study (Loughran et al., 2016; Schulenberg et al., 2018; Wechsler, Lee, Nelson, & Lee, 2003). Third, and like adolescents, peers and social status play a salient role in the identities and lives of college students (Brown & Larson, 2009). Taken together, college students provide not only a convenient but an advantageous sample to study how peer influence and social status may differentially influence behavior when framed as gains versus losses.

At each institution, researchers visited introductory criminology and sociology courses and explained that they were interested in risky and criminal behavior among college students. The students were informed that the survey responses would be anonymous and that they must be 18 years of age or older to participate in the study. There were no incentives provided for taking the survey and subjects were given about 10 minutes to complete the instrument. Students were told that the survey involved responding to a hypothetical vignette, and all that was asked of them was to imagine themselves in the scenario provided and to truthfully respond with how they think they would act in that situation. The surveys began with simple demographic questions and then followed by the hypothetical vignettes.

We examine the willingness to offend for three different types of deviant behaviors that are relatively common among college students: Fighting, drunk driving, and marijuana use. Some scholars have expressed concern over the use of vignettes and “willingness to offend” measures for testing issues concerning crime and deviance (Exum, Turner, & Hartman, 2012), but we believe that vignettes are appropriate for the current study for several reasons. First, we have an explicit interest in individuals’ intentions or willingness to offend contingent on the framing of social consequences. As Ajzen (1988) has noted, behavioral intentions is a concept of interest in itself, as intentions tend to precede actual behavioral action. Second, several scholars have championed for the use of vignettes to test issues of how situational characteristics (like framing of social consequences) influence behavioral intentions (Piquero et al., 2011), as it gives researchers control over the characteristics of the scenario (Agnew, 1994; Steffensmeier & Ulmer, 2013; Thomas, 2018). In fact, several important insights regarding offender decision making have been initially observed using the vignette approach (Nagin & Paternoster, 1994). Third, although there is not always a one-to-one overlap between intentions and actual behavior, researchers have found a strong correlation between intentions to offend in a vignette and actual offending behavior (Pogarsky, 2004).

For each crime type we use a  $2 \times 2$  factorial design where respondents are randomly assigned into one of four conditions where: 1) friends encourage deviance and social consequences are framed as gains in status (Deviant Gains); 2) friends encourage deviance and social consequences are framed as losses (Deviant Losses); 3) friends encourage conforming behavior and social consequences are framed as gains (Conforming Gains) and; 4) friends encourage conforming behavior and social consequences are framed as losses (Conforming losses). Each respondent received only one crime type and one condition. All of the vignettes and response options are available to readers, but for space purposes we present only the fighting vignettes in text. The full vignettes for both the drunk driving and marijuana use conditions are available in the online Appendix.

### **Fighting vignettes**

The scenarios capturing one’s willingness to fight were distributed to 406 individuals across the three universities. The vignette described a situation where the respondent was accosted by a fellow partygoer. The vignette read:

*Imagine you are at a party with some friends. After a little while, another guest at the party—who you never met before—stands in front of you and starts insulting you and calling you names. You ask him/her to step back, and s/he says “make me”. You can either turn the other cheek and walk away or push them away.*

The manipulation came in a subsequent sentence where individuals were told that the friends either encouraged (*Deviant*) or discouraged (*Conforming*) pushing the person and the social consequences were framed as either *Gains* in respect or *Losses* in respect.<sup>3</sup> Respondents were then asked what they think would be their most likely

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<sup>3</sup>It was noted above that reference dependence is a decision making characteristic relevant for the current study. Our use of the terms “gains” and “losses” incorporates reference dependence by framing the consequence as changes from one’s current state, and it is thus embedded in our scenarios.

course of action. Specifically, the manipulation and key question of interest were the following for each condition:

*Deviant Gains (N = 103):* You know that **if you stand up for yourself** and push him/her away that your friends would **gain respect for you and think you are tougher**, but if you push him/her it will likely start a fight.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Push the person and gain respect from your friends
- b. Walk away

*Deviant Losses (N = 103):* You know that **if you don't stand up for yourself** and push him/her away that your friends would **lose respect for you and think you are weaker**, but if you push him/her it will likely start a fight.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Push the person
- b. Walk away and lose respect from your friends

*Conforming Gains (N = 95):* You know that if **you just ignore him/her and walk away** your friends would **gain respect for you and think you are more mature**, but if you push him/her it will likely start a fight. .

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Push the person
- b. Walk away and gain respect from your friends

*Conforming Losses (N = 105):* You know if **you don't just ignore him/her and walk away** that your friends would **lose respect for you and think you are less mature**, but if you push him/her it will likely start a fight.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Push the person and lose respect from your friends
- b. Walk away<sup>4</sup>

We ordered the surveys prior to handing them out using a random number generator, and thus randomly distributed them to the research subjects. Our hypotheses that social consequences are more salient when framed as status losses instead of

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<sup>4</sup>Providing respondents two behavioral options for each scenario is consistent with prior research in behavioral economics assessing loss aversion. We recognize, however, that this is not common in much of the vignette research in criminology. To mitigate this concern, we constructed our surveys so that the provided responses were realistically exhaustive in the scenarios. Further, during piloting process we solicited reactions to the response options and they reported the responses reflected realistic and exhaustive reactions to the scenarios.

status gains would be supported if individuals in the *Deviant Losses* condition are more likely to report pushing the antagonist than individuals in the *Deviant Gains* condition, and if individuals in the *Conforming Losses* condition are less likely to push the person than respondents in the *Conforming Gains* condition.

### **Drunk driving vignettes**

407 individuals from the three universities received the instruments that captured willingness to drive under the influence of alcohol. Respondents were asked to imagine that they are drinking alcohol at a friend's house. When the time to leave approaches, the subjects are told that they can either knowingly drive under the influence and risk getting a DUI or, depending on the condition (e.g. deviant versus conforming), refuse to drive or take an Uber.<sup>5</sup> The randomized manipulation comes in the  $2 \times 2$  design where the friends of the respondent either encourage driving under the influence or not, and where social consequences are framed as gains in status or losses in status. Prior to distributing, the surveys were ordered using a random number generator. The sample size for the four conditions were: *Deviant Gains* ( $N = 105$ ), *Deviant Losses* ( $N = 100$ ), *Conforming Gains* ( $N = 102$ ), and *Conforming Losses* ( $N = 100$ ). As noted above, the full drunk driving vignettes are presented in the online Appendix.

### **Marijuana use condition**

431 undergraduates at the three universities received the survey instruments that included vignettes about using marijuana. In each of the scenarios individuals are asked to imagine that they are at a house party with co-workers who either encourage (deviant peers) or discourage (conforming peers) the use of marijuana when the respondent is offered, and the social consequences are framed either as status gains or status losses. The full marijuana use vignettes are presented in the online Appendix. After reading the vignettes individuals were asked if they would smoke the marijuana or refuse to use the substance. As with both the fighting and drunk driving experiments, we ordered the surveys using a random number generator to ensure that the conditions were randomly distributed to respondents.<sup>6</sup> The breakdown of the sample sizes are: *Deviant Gains* ( $N = 103$ ), *Deviant Losses* ( $N = 108$ ), *Conforming Gains* ( $N = 110$ ) and, *Conforming Losses* ( $N = 110$ ).

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<sup>5</sup>We used different vignettes in the "deviant" peer and "conforming" peer conditions simply because we could not think of a scenario where friends would realistically both encourage deviance and pro-social behavior. We stress that our use of different scenarios does not affect the central research question of the current study, as our analyses examine willingness to offend within the deviant and conforming scenarios. That is, we assess the impact of framing social consequences as losses versus gains among those who receive the scenario where friends promote driving intoxicated and a separate analysis among those who receive the scenario where friends discourage driving under the influence. See the appendix for the full vignettes.

<sup>6</sup>Recreational marijuana use is legal for those 21 years or older in one of the states in which we conducted the survey. The overwhelming majority of respondents at this university were under the age of 21. We conducted supplemental analyses remove those 21 years of age or older and the results are substantively the same as those presented in text.

## **Analytic strategy**

Our main analyses proceed in three stages. We first begin by simply examining whether individuals assigned to a condition where peers encourage deviance are more likely to report a willingness to offend when compared to individuals who were assigned a condition where peers discourage offending. Given the strong and robust relationship between associating with deviant peers and one's own deviance (Warr, 2002), conducting such an analysis allows for an initial validity test for the current study. We then examine whether threat of status losses weigh more heavily than potential status gains for those who received a vignette in which peers were promoting deviant behavior. If individuals are loss averse in terms of social consequences, we predict that respondents who are presented scenarios where friends will *lose* respect for them for not engaging in deviance will be more likely to report an intention to offend when compared to individuals who received vignettes where the consequences are framed as status gains. Finally, we assess whether individuals who are presented vignettes in which the peers promote pro-social behavior are less likely to report an intention to offend when the social consequences are framed as losses in status for engaging in deviance compared to gains in status for not engaging in deviance. Given that our outcome of interest in each stage of the analysis is a binary willingness to offend item we use a difference in proportions test to examine our hypotheses.

## **Results**

### ***Assessing the effectiveness of randomization***

For each peer (deviant versus conforming) and crime type (fighting, drunk driving, marijuana) combination we examine if respondents who received the status gain frame were equivalent on observed characteristics as respondents who received the status loss frame. To do this we used a logit model regressing treatment status (e.g., loss frame versus gain frame) on gender (male = 1), age, race (white = 1, non-white = 0), impulsivity, importance of friends, and prior offending behavior to predict treatment assignment, and examine overall model fit.<sup>7</sup> The null hypothesis is that the observed coefficients of the predictors are jointly equal to zero, which would indicate that treatment assignment is not conditional on the observed covariates.<sup>8</sup> The results of the joint significance tests (presented in Table 1) indicate that for each pairwise comparison we fail to reject the null hypothesis, indicating that randomization successfully resulted in balance between treatment conditions.<sup>9</sup>

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<sup>7</sup>Impulsivity was measured through the mean of three items: "I often act spur of the moment without stopping to think," "I don't devote much thought and effort for preparing for the future," and "I often do what brings me pleasure here and now, even at the cost of some distant goal." Importance of friends was captured through the single item: "I care what my friends think about me." All items were on a 4-point Likert scale.

<sup>8</sup>The randomization process should, in theory, balance characteristics that are unobservable, as well. For example, research subjects may have different experiences in the past with regards to the extent at which peers have encouraged deviance. Such differences should not bias our results, as we can be relatively confident that prior experiences are equally distributed across groups.

<sup>9</sup>None of the individual predictors were statistically different at  $p < .05$ ; however, some approached statistical significance. In the conforming-fighting conditions those with loss frames were more likely to report a prior tendency to fight (.20 versus .12,  $p = .16$ ); in the conforming-drunk driving conditions individuals in the loss frame were more likely to be male (.48 versus .39,  $p = .20$ ); and in the deviant-marijuana conditions those receiving a loss

**Table 1.** Descriptive information and equivalence test.

	Deviant Fighting	Conforming Fighting	Deviant Drunk Driving	Conforming Drunk Driving	Deviant Marijuana	Conforming Marijuana
Impulsivity	1.919 (.531)	2.010 (.587)	2.051 (.546)	2.025 (.539)	2.016 (.553)	1.971 (.538)
Care Friends	3.184 (.749)	3.231 (.783)	3.328 (.712)	3.280 (.659)	3.166 (.760)	3.155 (.790)
Age	20.801 (4.292)	20.608 (4.710)	19.776 (3.799)	19.757 (3.563)	20.953 (6.429)	20.717 (5.815)
Male	.364 (—)	.392 (—)	.429 (—)	.436 (—)	.362 (—)	.353 (—)
White	.684 (—)	.715 (—)	.717 (—)	.777 (—)	.697 (—)	.677 (—)
Prior Fight	.136 (—)	.165 (—)	— (—)	— (—)	— (—)	— (—)
Prior Drunk Driving	— (—)	— (—)	.181 (—)	.193 (—)	— (—)	— (—)
Prior Marijuana	— (—)	— (—)	— (—)	— (—)	.621 (—)	.636 (—)
Joint-significance $\chi^2$ Test (d.f. = 6)	$\chi^2 = 2.51$	$\chi^2 = 3.52$	$\chi^2 = 1.00$	$\chi^2 = 2.83$	$\chi^2 = 3.28$	$\chi^2 = 2.30$
$p > \chi^2$	.868	.742	.986	.830	.773	.891
N	206	200 <sup>a</sup>	205 <sup>b</sup>	202 <sup>c</sup>	211 <sup>d</sup>	220 <sup>e</sup>

NOTE: The sample sizes for the joint-significance tests are smaller than listed in the table due to some respondents skipping individual control items. The sample sizes are as follows in the joint-significance tests:

<sup>a</sup>N = 196.

<sup>b</sup>N = 200.

<sup>c</sup>N = 199.

<sup>d</sup>N = 209.

<sup>e</sup>N = 217.

### ***Deviant versus conformity encouraging peers***

Table 2 presents the results comparing the willingness to commit the three crime types for those who were presented a scenario where the friends encourage deviance to those presented scenarios where peers promote conformity. Whereas 26 percent of respondents who received a vignette where peers promoted fighting reported a willingness to fight, only 16 percent did so when provided a vignette where the peers promoted just “walking away,” and these differences are statistically significant ( $p < .01$ ). Individuals who were exposed to deviant peers in the drunk driving scenarios were also significantly more likely to report a willingness to drive under the influence (19%) when compared to individuals in the conformity peer conditions (12%;  $p < .05$ ). Finally, individuals provided vignettes where the peers promote smoking marijuana are more likely to report a willingness to smoke than individuals presented a vignette where the friends discourage marijuana use (41% versus 21%;  $p < .001$ ). It is worth highlighting that our results show that the deviant peer effect is largest in our marijuana use condition, which is consistent with prior work that finds that peers have a

frame were slightly more likely to use marijuana in the past (.67 versus .57,  $p = .17$ ). In each case we estimated logit models controlling for these covariates and the results are substantively and statistically the same as those presented in text.

**Table 2.** Difference in proportions test comparing willingness to offend between deviant and conforming peers conditions.

<i>Crime Type</i>	Deviant Friends	Conforming Friends	% Difference	<i>p</i> -value
Fighting	.262	.155	69.032%	.008
Drunk Driving	.195	.124	57.258%	.049
Marijuana Use	.412	.210	96.190%	.000

**Table 3.** Difference in proportions test assessing loss aversion among respondents who received a deviant peer condition.

<i>Crime Type</i>	Status Gains	Status Losses	% Difference	<i>p</i> -value
Fighting	.165	.359	117.576%	.002
Drunk Driving	.124	.270	117.742%	.008
Marijuana Use	.350	.472	34.857%	.070

particularly strong influence on substance use (Akers et al., 1979; Akers & Cochran, 1985; Pratt et al., 2010; Warr, 2002). We now turn to tests of our main hypotheses: Whether framing social consequences as losses weigh more heavily in offending decisions than status gains.

### ***Deviant peers: status gains versus status losses***

Table 3 indicates that, for all three crime types, individuals are more likely to report a willingness to engage in deviant behavior when the social consequences are framed as status losses for not engaging in deviance as opposed to status gains for engaging in deviance. Thirty-six percent of respondents who were told their friends would lose respect for them for not standing up for themselves (*Deviant Losses*) reported a willingness to fight, while only 17 percent of individuals in the *Deviant Gains* condition reported a willingness to fight. These proportions are significantly different at an alpha  $< .01$  ( $p = .002$ ). We find similar results as it pertains to drunk driving. Whereas 27 percent of individuals reported a willingness to drive drunk when told that their friends would lose respect for them for not driving drunk, only 12 percent said they would drive under the influence when their peers would gain respect for them for keeping their promise and driving under the influence. This difference is statistically significant at  $p < .01$ . Finally, while we observed that individuals in the *Deviant Loss* condition reported a greater willingness to smoke marijuana compared to those in the *Deviant Gains* condition (47% versus 35%), these differences were not statistically significant at the traditional alpha-level of .05 ( $p = .07$ ). These findings largely support the notion that individuals have a greater willingness to offend when social consequences are framed as losses from their reference point as opposed to gains.

### ***Conforming peers: status gains versus status losses***

Table 4 presents the results of tests examining whether framing social consequences as status losses has a greater impact on the willingness to offend than status gains among those who were provided vignettes where the peers promoted non-deviant

**Table 4.** Difference in proportions test assessing loss aversion among respondents who received a conforming peer condition.

<i>Crime Type</i>	Status Gains	Status Losses	% Difference	<i>p</i> -value
Fighting	.200	.114	−43.000%	.094
Drunk Driving	.206	.040	−80.583%	.000
Marijuana Use	.284	.136	−52.113%	.008

behavior. For all three crime types the data suggest that individuals are less likely to report a willingness to deviate when the social consequences are framed as losses for deviating than status gains for not deviating. Individuals in the *Conforming Gains* condition were more likely to report an intention to fight (20%) as compared to those in the *Conforming Losses* condition (11%). Although this difference is nearly two-fold, it is not statistically significant at a .05 alpha level ( $p = .09$ ). Turning to driving under the influence, we observe substantial differences in the willingness to drive intoxicated when social consequences are framed as losses (21%) as opposed to gains (4%). The difference in proportions is statistically significant ( $p < .001$ ). Finally, our findings indicate that individuals in the *Conforming Losses* condition report a lower willingness to smoke marijuana (14%) when compared to those in the *Conforming Gains* condition (28%), and this difference is statistically significant ( $p < .01$ ). Thus, the findings in the *Conforming Peers* conditions largely support the notion that individuals are more likely to follow the desires of the peer group when social consequences are framed as losses from their reference point as opposed to gains.

## Discussion

Much of the prior work assessing peer influence—both theoretical and empirical—has suggested that individuals are motivated to engage in deviant acts in the hopes of gaining social status (Akers, 1998; Thornberry et al., 1994). Guided by prospect theory and loss aversion (Tversky & Kahneman, 1991), we tested an alternative mechanism in which individuals conform to the group—to prevent loss of status for not conforming to peers. We surveyed college students at multiple universities across the United States to investigate this hypothesis by providing respondents with vignettes where the hypothetical peer group either endorses deviant behavior or non-deviant behavior across three types of behaviors (fighting, driving drunk, and using marijuana). Several noteworthy findings emerged.

For the conditions where peers promoted deviant behavior, respondents reported a greater willingness to engage in deviance when the consequences were framed as status losses for not engaging in deviance. We also observed that expectations of losses in status from the peer group can promote pro-social behavior. That is, among those who were provided vignettes where peers promoted non-deviant behavior (e.g., turning the other cheek instead of fighting, taking a cab instead of driving under the influence) individuals were less likely to report a willingness to engage in deviance when the social consequences were framed as losses for engaging in deviance than when the consequences were framed as status gains for not engaging in deviance. The general tendency for individuals to be loss averse when it comes to social status was



observed across all three crime types. Importantly, our results do not suggest that potential gains are irrelevant for understanding behavior, or play no role in decisions to commit crime, rather the results simply lend support to notion that the threat of losing social status can be a *stronger* motivator of both deviant and non-deviant behavior than the prospects of gaining social status (Warr, 2002).

Of course, we are not the first to suggest that potential losses in status can act as a powerful motivator for behavior (see Short & Strodtbeck, 1965; Warr, 2002), nor are we the first to call for an incorporation of insights from judgment and decision making to elucidate processes of group influence (see Hoeben & Thomas, 2019). Still, the idea of “peer influence” in criminology has largely been viewed under the umbrella of social learning theory that emphasizes anticipated positive (and largely social) reinforcements (Akers, 1998). With few exceptions, extant statements within the discipline of criminology have not explicitly commented on the interdependence of offending decisions ( however, see McGloin & Rowan, 2015; McGloin & Thomas, 2016 ). Similarly, the focus on decision making in criminology has largely been on the internal cognitive processes used by potential offenders. There have been relatively few studies that consider the contextual factors in which choice is structured. Indeed, although the peer influence and offender decision making literatures are arguably two of the largest in the discipline, they have, to date, developed mostly independent of one another. We believe that much can be gained by “moving choice to center stage” (Nagin, 2007) when examining how group processes influence offending.

The salience of the threat of losing social status dovetails with the idea of social costs and informal social control. Informal social control is defined as the application or threat of application of sanctions with the intention of gaining compliance from an individual actor (Nagin & Paternoster, 1994). In criminology, we typically conceive of the role of social costs and informal social control as a means of promoting pro-social behavior among individuals motivated to deviate (Costello, 2010; Hirschi, 1969; Sampson & Laub, 1993). Indeed, we found support for this notion in the vignettes assessing whether pro-social peers can promote conformity through the threat of status losses. We also found, however, that the threat of potential social sanctions (e.g., status loss) plays a significant role in a group’s ability of gaining compliance *towards* deviance. Extending social costs to be applicable towards deviance may be an avenue to integrate decision making into understanding group processes (Williams & Hawkins, 1986). It may also be consistent with the work of Costello and Hope (2016) who have sought to understand the peer-delinquency relationship through a social control perspective, emphasizing how peer groups use informal sanctions such as ridicule to gain compliance (see also Costello, 2010).

Our results may shed some light on some observed relationships between network characteristics (e.g., popularity) and the tendency to engage in delinquent behaviors (Giordano, Cernkovich, & Pugh, 1986). Using data from Pennsylvania and Iowa high schools, Kreager, Rulison, and Moody (2011) found that groups that consume alcohol have higher status than non-drinking groups. Similarly, Hughes (2013) analyzed data from Short and Strodtbeck’s (1965) classic study of gangs in Chicago, and noted: “At the individual level, popular boys were at a significantly increased risk for both delinquency and violence, suggesting a link between prestigious positions within the

structure of gang friendship networks and conformity with group processes.” Interestingly, there is some indication that popularity *precedes* increased involvement in delinquency. Haynie (2001) argued that this may occur because individuals higher in the social hierarchy have “the most to *lose* (furthest to fall in the status hierarchy) by not adopting network behavior” (p. 1026, emphasis added; see also Schreck, Fisher, & Miller, 2004). Research has also shown that popular adolescents, while increasing behaviors that they perceive their peers to value, show a decrease in behaviors for which they believe their peers will disapprove (Allen et al., 2005). We believe that our findings showing evidence of loss aversion to social status are consistent with these prior findings. Indeed, the evidence of aversion to status losses was robust to the message and content conveyed by the peers in our vignettes (either deviant or non-deviant), suggesting that losing social status is salient regardless of the type of behavior that is involved and the composition of the social group.

Our findings—in combination with prior work—open important avenues for future research exploring the implications for status loss aversion in the study of crime and deviance (Dodge, Dishion, & Lansford, 2007). We provide evidence here that the threat of status losses can impact the decision to engage behaviors at a given time point, but prior research has also found that losses in status can affect behaviors and self-perception *subsequent* to the status loss. Prislin, Limbert, and Bauer (2000) conducted a series of lab experiments among a sample of undergraduate students to study individuals’ reactions to status change. They found that respondents assigned to a status loss conditions reported lower perceived similarity between the respondent and the group and had greater judgmental reactions to the group compared to respondents who were in the status gain conditions. Marr and Thau (2014) used historical data from professional baseball players and a group experiment, and similarly found that the loss of status was detrimental for performance after the status loss, especially among players with higher statuses. Future research should not only investigate how peers can affect the decision to engage in behaviors but also how changes in social status (both gains and losses) can impact subsequent offending (Dodge et al., 2007).

A related idea is the extent to which aversion to losses varies over the life course and whether (and to what extent) this may contribute to changes in offending over time. Research shows that individuals generally become more loss averse in terms of financial decisions in adulthood (Arora & Kumari, 2015). Although there are no tests of this directly as it pertains to crime and deviance, there may be some indication that this is indeed the case. Thomas and Vogel (2019) recently tested a rational choice model of desistance and found that while anticipated social rewards had a strong impact on offending in adolescence, the effect of anticipated social costs (e.g., disappointing others) was weak. In adulthood, however, the opposite was true: the potential of disappointing friends, family, and significant others had a large influence on offending in adulthood, while the potential social rewards to crime had relatively weak effects. This finding—that potential social costs weigh more heavily in adulthood—in combination with the general tendency of individuals to be more likely to associate with individuals who socially punish crime in adulthood may prove important for understanding desistance crime. Importantly, prior work has not measured loss aversion directly, so such interpretations are speculative at best. We nevertheless

contend that a greater integration of loss aversion—and behavioral economics more generally—into life course frameworks may prove informative.

Another avenue for future research is an examination of whether individuals are differentially affected by potential status gains or losses depending on their current position in the status hierarchy. Our randomization process allows us to reasonably assume that initial status position was balanced across conditions, and we use clear language in the vignettes to suggest that the consequences (gains or losses) are changes from each individual's initial reference point. Thus, our findings suggest that *on average* individuals are more sensitive to status losses than status gains. But it is possible that there is heterogeneity in framing effects contingent on an individuals' baseline status level. For example, it may be that individuals high in a status hierarchy are particularly sensitive to threats of status loss because, as Haynie (2001) pointed out, they have the most to lose in the status hierarchy. Conversely, individuals low on the status hierarchy (e.g., social isolates; Kreager, 2004) presumably have little to lose and everything to gain, and therefore may be more sensitive to potential gains in status when deciding whether to engage in deviant conduct. There are other forms of treatment heterogeneity that may be of interest to scholars (e.g., the moderating effect of impulsivity on framing and the influence of other contextual factors) that are outside the purview of the current study. We nevertheless encourage future work to examine potential heterogeneous effects of status gains and status losses on delinquent tendencies.

Given that loss in social status is an aversive state that people seek to avoid, scholars should not only invest more research on decision making processes, but also consider ways to integrate these ideas into programs and policies that are concerned with reducing the potential for deviant peer influence. In Prislin et al. (2000) study, respondents commonly indicated that their misdeeds were not triggered by a drive to ascend the ranks or a bigger bonus check, but instead by worries about being cast in a negative light and losing their standing in the eyes of others. Indeed, scholars have explored policy implications of loss aversion in improving political decision-making (Jervis, 1992), financial decision-making (Aizenman, 1998; Haigh & List, 2005), tax compliance (Engström et al., 2015), and teaching efficacy (Fryer, Levitt, & Sadoff, 2012). It is possible that highlighting the potential losses in social status among an individuals' conventional peer group can dovetail with extant programs that aim to combat deviant peer influence.

Our study is not without limitations. First, we rely on a college student sample to examine whether individuals are loss averse when it comes to social status and the decision to engage in deviance. Of course, the seminal studies by Tversky and Kahneman (1979, 1991) identifying the loss aversion phenomenon relied almost entirely on college student samples, and samples of university students have regularly been used by scholars interested in decision making in criminology (McGloin & Rowan, 2015; Nagin & Pogarsky, 2001; Thomas et al., 2018). Nevertheless, the fact remains that college students are not representative of the broader population typically of interest to criminologists. For example, it is possible that active offenders are less concerned with social status compared to college students or that street-oriented youth who face high levels of disadvantage may have other concerns that drive their offending behavior (e.g., fear of future victimization/retaliation or the need for money for food and rent). Thus, while research examining high-rate offenders and

street-oriented youth has revealed that social identity and acceptance from fellow peers plays a role in offending decisions (e.g., Goldman, Giles, & Hogg, 2014), research has also suggested the decision making processes of active and high rate offenders differs from college students and the more general population (Topalli, 2005) and it is likely that many college students have the luxury of having status in the social hierarchy be a primary concern, whereas other individuals face more difficult situations. Even further, research has indicated that individuals residing in areas characterized by high levels of concentrated disadvantage are more likely to tolerate deviance, suggesting that engaging in criminal activity may result in less adverse social consequences (Sampson & Bartusch, 1998). For these reasons, we encourage future work to examine the relationship between loss aversion, social consequences and deviance using both a more representative sample, and a sample of individuals particularly at risk for committing crime.

Second, the use of hypothetical vignettes allowed us to carefully craft and randomly assign scenarios where we can assess respondents' likelihood of engaging in specific behaviors. We were also able to account for the timing of the stimuli and the response. Our vignettes attempted to engage the respondents' interests and were relatively short, which has been shown to increase the quality of data (Hughes & Huby, 2002). We also piloted the vignettes to a small number of students to increase the realism and other features of the instrument. Indeed, several scholars have argued that hypothetical vignettes—which capture *intentions* to offend—offer an informative way to assess individuals' propensity towards certain behavior (Ajzen, 1998; Steffensmeier & Ulmer, 2013; Thomas, 2018), and have been argued to be effective at testing hypotheses related to offender decision making (Grasmick & Bursik, 1990; Nagin & Pogarsky, 2004). Nonetheless, we recognize that some scholars have questioned the extent at which vignettes correspond to actual behavior (Exum et al., 2012; Loughran, Paternoster, & Thomas, 2014; Van Gelder, 2018). Future research should consider ways to complement laboratory experiments and hypothetical vignettes with observational data. Indeed, criminologists should take up Camerer's (1998) call for studying prospect theory “in the wild”.

Third, our study examined three types of deviant behavior: fighting, drunk driving, and marijuana use. We believe that these behaviors present realistic vignettes for our sample of college students. Although we observed consistent findings across all three types of deviance, researchers might consider examining other types of crimes, as research suggests that the willingness to engage in crime greatly varies by crime type (Thomas, 2018). It would be interesting to examine if the relationship between the threat of loss of social status and more serious types of crimes (e.g., aggravated assault or robbery) yield similar results.

In conclusion, the influence of group processes in the etiology of deviance remains a staple of criminological thought. Although there has been impressive evidence that individuals are influenced by peers when it comes to decisions to offend (see Warr, 2002), we know surprisingly little about the more proximal mechanisms that help account for the observed relationship (McGloin & Thomas, 2019). In this study, we incorporated insights from behavioral economics and prospect theory, and found that framing social consequences as losses weighed more heavily in decisions to conform to the peer group than analogous status gains. We believe that these findings have

implications for the peer influence and decision-making literatures independently, but also believe that it highlights the potential utility of considering how the two literatures might be integrated to better understand the causes of crime and deviance.

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## Appendix

This appendix is a complement to the manuscript *Status Gains versus Status Losses: Loss Aversion and Deviance*. In this appendix we present the full vignettes for the drunk driving and the marijuana use conditions

### Drunk driving vignettes

The driving under the influence vignette for those in the deviant friends conditions read:

*Imagine you and your friends have dinner reservations at a new restaurant across town, and decide to meet at your friend's house for some pre-dinner drinks. You volunteer to be the designated driver, but have a couple of drinks at your friend's just to be social. After a little while, you realize it is time to leave and your friends ask you to drive them. There are no cabs or Ubers immediately available and if you wait for one you will miss your reservation. You feel mostly okay to drive but know that you are over the legal limit. You can either drive your friends or admit to them that you are not sober enough to drive.*

The randomized manipulation and subsequent willingness to offend questions were as follows:

*Deviant Gains (N = 105):* You know your friends would **gain respect for you if you keep your promise and drive to the restaurant**, but if you get pulled over you would get a DUI.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Drive to the restaurant and gain respect from your friends
- b. Choose not to drive

*Deviant Losses (N = 100):* You know your friends would **lose respect for you if you don't keep your promise and drive to the restaurant**, but if you get pulled over you would get a DUI.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Drive to the restaurant
- b. Choose not to drive and lose respect from your friends

We used a slightly different vignette for the conditions in which the friends promote conforming behavior (i.e., not driving under the influence):

*Imagine that you go to a friend's house for drinks. You drive there and do not plan on drinking much because you have an important appointment early the next morning. After a few of hours guests begin to leave. You feel mostly okay to drive, but know that you are over the legal limit. You can drive your car home or take an Uber, but if you take an Uber you will have to wake up even earlier to get your car before your morning appointment.*

*Conforming Gains (N = 102):* You know your friends would **gain respect for you and think you are more responsible if you do not drive home**, but if you Uber you will need to get your car in the morning.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Drive home
- b. Take an Uber and gain respect from your friends

*Conforming Losses (N = 100):* You know your friends would **lose respect for you and think you are less responsible if you drive home**, but if you Uber you will need to get your car in the morning.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Drive home and lose respect from your friends
- b. Take an Uber

### ***Marijuana use vignettes***

Respondents received the following vignettes for the marijuana use conditions:

*Imagine that you start a new job and become friends with your new coworkers. You attend a party with your coworkers, and after a little while someone at the party pulls out some weed and passes it around. Your friends all take a hit of [do not smoke] the marijuana and then it is offered to you.*

*Deviant Gains (N = 103):* You know that if you **took a hit** of the marijuana your friends would **gain respect for you and think you are cooler**.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Take a hit of the marijuana and gain respect from your friends
- b. Pass on the marijuana

*Deviant Losses (N = 108):* You know if you **don't take a hit** of the marijuana your friends would **lose respect for you and think you are less cool**.

Take a moment to think about how you would act in this situation. Would you (circle one):

- a. Take a hit of the marijuana
- b. Pass on the marijuana and lose respect from your friends

Importantly, we present just this single scenario above for space purposes, but in the “conforming peers” condition respondents are told that the friends *do not smoke the marijuana*, as indicated by the text in the brackets in the provided scenario. That is, individuals assigned the “conforming marijuana” vignettes were told that their friends “do not smoke the marijuana” and are then also told that the friends would not approve of the respondent smoking. More specifically, after the vignette the respondent was presented one of the following statements:

*Conforming Gains (N = 110):* You know if you **turned down the marijuana** your friends would **gain respect for you and think you're cooler**.

Take a moment to think about how you would act in this situation. Would you (circle one):

- Take a hit of the marijuana
- Pass on the marijuana and gain respect from your friends

*Conforming Losses (N = 110):* You know if **you took a hit** of the marijuana that your friends would **lose respect for you and think you are less cool**.

Take a moment to think about how you would act in this situation. Would you (circle one):

- Take a hit of the marijuana and lose respect from your friends
- Pass on the marijuana