**Crime & Delinquency**
Volume 56 Number 2
April 2010 227-252

10.1177/0011128707311642
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# Defiance Theory and Life Course Explanations of Persistent Offending

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Criminologists have long grappled with the varying effect of sanctions. In an effort to clarify these divergent effects, Sherman (1993) delineated a general theory of sanction effects, termed *defiance theory*. Defiance theory anticipates that there are four necessary conditions for defiance to occur: (a) the sanction must be perceived as unfair; (b) the offender must be poorly bonded; (c) the sanction must be perceived as stigmatizing; and (d) the offender denies the shame produced by the sanction. This study provides one of the first empirical assessments of defiance theory. In addition, defiance theory is examined within the life-course perspective, and analyses address trajectories of offending. Using data from the 1945 Philadelphia Birth Cohort, the results yield promising support for the theory.

***Keywords:*** *defiance theory; persistent offending; life course*

Throughout the history of criminological theorizing, scholars have attempted to understand the impact of sanctions on criminal behavior. Deterrence theorists predict that sanctions, especially swift, certain, and proportionally severe sanctions, will deter or reduce further criminal behavior (Gibbs, 1975). Labeling theory, on the other hand, predicts that sanctions will stigmatize the offender, producing deviance amplification or increased offending in the future (Lemert, 1967; Paternoster & Iovanni, 1989). More recent scholarship has been directed at examining the cumulative effects of these sanctions on criminal trajectories (Sampson & Laub, 1997). The empirical evidence for deterrence versus labeling has been mixed (Nagin, 1998; Tittle & Ward, 1993). Recognizing this diversity in sanction effects, some scholars have recently proposed theories to explain the contextual factors that contribute to the impact that a particular sanction will

have on continued or curtailed criminal activity (see Braithwaite, 1989; Sherman, 1993). Attention to the impact of criminal sanctions has helped shed light on two aspects often studied by researchers working in the criminal career and life course perspective, persistence and desistance in offending (A. R. Piquero, Farrington, & Blumstein, 2003). As Kempf-Leonard, Tracy, and Howell (2001) note, exploring differences within offender groups and changes in individual rates of offending are important areas for research. This study aims to examine Sherman's (1993) defiance theory and explore how the theory fits into a life course framework as an explanation of continued offending.

## Explicating Defiance Theory

The starting point in Sherman's (1993) defiance theory is the differential effects of sanctions. Deterrence theory suggests that when punishment is swift, certain, and severe, future offending is unlikely (Gibbs, 1975). On the other hand, labeling theory predicts that being identified and labeled as a deviant or criminal produces further deviance through processes such as "secondary deviance" and "deviance amplification" (Lemert, 1967; Paternoster & Iovanni, 1989). Therefore, in varying instances, sanctions may either deter or promote future offending. Sherman (1993) developed defiance theory to account for the diversity in sanction effects by integrating Braithwaite's (1989) theory of reintegrative shaming, Tyler's (1990) concept of procedural justice, and Scheff and Retzinger's (1991) discussion of the role of shame and rage in destructive conflicts.

Defiance is defined as "the net increase in the prevalence, incidence, or seriousness of future offending against a sanctioning community caused by a proud, shameless reaction to the administration of a criminal sanction" (Sherman, 1993, p. 459). The theory suggests that there are four necessary conditions for defiance to occur: (a) the sanction must be defined by the offender as unfair, (b) the offender must be poorly bonded to society, (c) the sanction must be viewed by the offender as stigmatizing, and (d) the offender must deny the shame produced by the sanction. For Sherman, the primary causal mechanism is the emotion of shame. It is the dynamic nature of the emotional response in conjunction with the strength of the social bond that in some instances curbs future offending and in other instances produces further deviance.

As an integrated theory, defiance incorporates elements of reintegrative shaming (Braithwaite, 1989), procedural justice (Tyler, 1990), and Scheff and Retzinger's (1991) focus on shame and rage. In particular, Braithwaite

(1989) also attempts to explain varying sanction effects. Individuals who have strong social bonds (i.e., interdependency), may be more likely to experience reintegrative sanctions, which reject the act but avoid applying a label to the individual. Thus, reintegrative sanctions are likely to produce deterrence. Disintegrative sanctions, however, reject both the act and actor, stigmatize and label the offender, weaken existing social bonds, and may produce increased offending (Braithwaite, 1989). Sherman (1993) likewise recognizes the potential criminogenic effect of stigmatizing sanctions, especially among individuals with weak social bonds. He also highlights the role of shame, pointing both to Braithwaite's (1989) theory and to Scheff and Retzinger (1991), who argue that individual reactions to the shame of a sanction will vary depending on their level of social bonding. One additional factor for defiance theory involves perceptions of procedural justice (Tyler, 1990) or the fairness of sanctions. For Sherman (1993), sanctions that are perceived as unfair reduce the legitimacy of law enforcement or the criminal justice system, which reduces the likelihood of compliance (Tyler, 1990). Thus, perceptions of the fairness of a sanction and social bonding will affect whether an individual experiences the sanction as stigmatizing and responds with shame and rage.[1]

Three reactions to a punishment perceived as unfair are predicted as irrelevance, deterrence, or defiance (Sherman, 1993, p. 461). When a well-bonded offender perceives a sanction as unfair and accepts the shame that accompanies the sanction, deterrence is the expected response. On the other hand, when a well-bonded offender denies the shame associated with the unfair sanction, the expected outcome will likely be irrelevance, not deterrence. In this instance, the perceived unfairness of the sanction and the failure to accept the shame that accompanies the sanction will essentially nullify any deterrent effect produced by the strong social bond. The perceived unfair sanction is likely to have little or no effect on the future behavior of the offender. For poorly bonded offenders who perceive sanctions to be unfair and accept the accompanying shame, the sanction will be irrelevant or possibly a deterrent to future offending. On the other hand, the poorly bonded offender who denies the shame he or she feels as a result of unfair and stigmatizing sanctions is likely to respond defiantly and engage in future criminality (as predicted by labeling theory).

## Empirical Evidence Supporting Defiance Theory

Sherman (1993) concludes his theoretical formulation by noting that "until recently, the science of sanction effects has been short on facts and

even shorter on theory. Now, it seems, the available theory has gotten ahead of the facts" (p. 468). Despite the promise of defiance in explaining variation in sanction effects, there have been no complete tests of the theory since its development. Most of the evidence that can be marshaled in support of the theory is derived from studies not designed to examine its propositions.

For example, some research supports the notion that perceptions of unfairness, either to the law being imposed (Paternoster & Simpson, 1996) or to the sanction itself (Paternoster & Piquero, 1995; A. R. Piquero & Paternoster, 1998), are likely to lead to more criminal offending. In examining intentions to engage in corporate crime, Paternoster and Simpson (1996) found that the opportunity to challenge a law that was viewed as unfair was considered a benefit of criminal activity. This could be regarded as a defiant reaction to the perceived unfair law and the presumed effects of the sanctions. Paternoster and Piquero (1995) found that previously sanctioned individuals were more likely to engage in future offending (primarily substance abuse). They suggest that, because few youths are sanctioned for drug use in any way, those who do receive a punishment may perceive their treatment as comparatively unfair and respond defiantly by engaging in further delinquency (see A. R. Piquero & Paternoster, 1998).

Additional research examining police–citizen encounters indirectly tests some of the propositions articulated by defiance theory. These studies primarily focus on the offender's (or citizen's) perceptions of fair treatment by police officers in their encounters. Paternoster, Brame, Bachman, and Sherman (1997) examined the effects of arrest on the likelihood of engaging in subsequent domestic assaults and found that the offender's perceptions of fair treatment by police were important determinants of future offending. Likewise, in a study of resisting arrest, Belvedere, Worrall, and Tibbetts (2005) interpreted their results in a defiance framework, suggesting that minority suspects may feel unfairly treated at the hands of White officers, which may then increase their likelihood of resistance.

Mastrofski, Snipes, and Supina (1996) examined citizen compliance with police requests (the opposite of defiance) in Richmond, Virginia, and found only weak support for the impact of police officer's behavior (i.e., showing respect to the citizen) on whether the citizen complied with the officer's request. Instead, they found that elements of the situation, such as seriousness and citizen irrationality, increased the likelihood of disobedience. On the other hand, McCluskey, Mastrofski, and Parks (1999) replicated the Richmond study in Indianapolis, Indiana, and St. Petersburg, Florida, and found support for one of the tenets of defiance theory. Unlike the earlier study, they found that the perceived legitimacy of a police

officer's intervention was an important predictor of citizen compliance. In other words, when the police were perceived to be respectful to citizens, compliance was more likely.

More directly related to the defiance theory, N. L. Piquero and Bouffard (2003) attempted a partial test of specific defiance, or the defiant reaction of an individual to a sanction that a person experienced. This study also used a methodology that examined direct observations of police–citizen interactions. Their results indicated that confrontational and physical actions on the part of police were more likely to produce specific defiance (defined as refusing to cooperate, cursing at the officer, or physically aggressing against the officer), possibly because the actions were interpreted as unfair and stigmatizing.

Although these results are suggestive, they do not address the key to defiance theory (and to deterrence and labeling), which is an individual's perception of the sanction. Observations of police–citizen encounters can inform us about the factors influencing compliance or resistance to a police directive, but a test of defiance theory must focus on how the offender perceives and interprets the sanction. Although sanctions are most commonly thought of as penalties officially administered by the courts after a conviction, it is important to note that sanctions may vary. A broader interpretation of a sanction would include any penalty (i.e., social, moral, or legal) designed to ensure compliance or deterrence with the proscribed act. In this regard, deterrence and rational choice theorists often consider police contacts and the likelihood of arrest as a viable sanction to be feared and have shown that these police-related sanctions influence sanction threat perceptions as well as future criminal behaviors (Nagin, 1998; Paternoster, 1987; Sherman, 1993; Zimring & Hawkins, 1973). Therefore, the current study examines the perceptual nature of defiance theory and the impact of those perceptions on future offending more closely. It does so by placing defiance theory into a life course perspective, a task yet to be undertaken.

## Defiance Theory and the Life Course

At its base, defiance theory is closely related to both deterrence and labeling theories. From a life course perspective, the connection with labeling theory is interesting. Loeber and LeBlanc (1990) argue that of the major criminological paradigms, labeling is the only truly developmental theory because it deals with processes over time (especially deviance amplification). By extension, because defiance theory incorporates elements of labeling, it can also be discussed in a developmental or life course framework.

On this score, Paternoster and Iovanni (1989) note that perceptions of sanctions as "stigmatizing and exclusionary . . . act as intervening variables in the escalation to secondary deviance" (p. 384). Thus, a person's perception of a sanction as unfair and stigmatizing and their "proud, shameless reaction" produce defiance or an increase in offending (Sherman, 1993, p. 459).

Although neither labeling nor defiance theories offers an explanation of primary deviance, both may be used as explanations of secondary deviance. In a criminal career or life course framework, defiance theory then may provide some insight into both continuity in and desistance from offending. Sampson and Laub (1997), for example, describe the criminal career as a "stable pattern of deviant behavior that is sustained by the labeling process" (p. 139). Labeling plays an integral role in the persistence of offending within Sampson and Laub's (1993) age-graded theory of informal social control. For this theory, labeling results in alteration of an individual's identity, exclusion from conventional groups and activities, and increased contact with deviant groups, which in turn result in further deviance.

According to Lemert (1967), however, labeling does not affect self-perception. Rather, secondary deviance (persistence in offending) is a reaction to or "means of defense, attack, or adaptation to overt or covert problems created by the societal reaction" (Sampson & Laub, 1997, pp. 138-139). This seems to fit better with defiance theory's focus on shame and anger and secondary deviance as a defiant response to the imposition of a criminal sanction. Sherman (1993) relies on the work of Scheff and Retzinger (1991), who criticize early versions of labeling theory for failing to take emotions, especially shame, into account. For these authors, societal disapproval is described as a threat to the sanctioned individual's social bonds. If the individual accepts the shame that he or she feels, the conflict is considered constructive and the person recognizes the harm he or she may have caused and seek to avoid that behavior in the future (also see Braithwaite's [1989] theory of reintegrative shaming). If the person refuses to acknowledge or rejects that shame, Scheff and Retzinger (1991) describe a situation of destructive conflict that produces a shame and rage spiral. Anger and rage are protective measures against shame, a way of rejecting the shame, and a defense against a perceived attack. This produces a spiral of insult, humiliation, and revenge. Thus, this shame and rage spiral occurs when a person's bond is threatened, the shame is not acknowledged, and behavior is interpreted as an attack. This produces violence, hatred, and resentment, which may lead to defiance.

From the life course and criminal career perspective, defiance can be seen as an explanation of continuity in and desistance from offending. The

theory can explain desistance by arguing that if an individual defines a sanction as unfair and stigmatizing but has strong social bonds, that person may accept the shame that he or she feels or be unwilling to jeopardize their bonds through a defiant reaction. According to Sherman (1993), these individuals will be deterred from future offending. This theory also provides an explanation for continuity, which is the defiant response of a poorly bonded offender who defines their sanction as unfair and stigmatizing and refuses to acknowledge the shame they feel. These individuals may continue or escalate their offending, becoming involved in secondary deviance.

## The Current Study

This study examines defiance theory from a life course perspective, using longitudinal data that reflect an individual's perceptions of his or her first encounter with police and their offending career. Defiance theory proposes that those who perceive their treatment at the hands of sanctioning agents as unfair and stigmatizing, who have weak social bonds, and who refuse to acknowledge their shame are most likely to respond defiantly by continuing or increasing their offending. More specifically, the combination of these four elements in specific ways is necessary to produce a defiant reaction, leading to these hypotheses:

*Hypothesis 1a*: Among those who have had contact with the police, individuals who perceive their treatment as unfair and/or stigmatizing, who have weak social bonds, and who refuse to acknowledge their shame will continue their offending.

*Hypothesis 1b*: For individuals who have weak social bonds but accept the shame of an unfair and/or stigmatizing sanction, the sanction will be irrelevant to future offending or reduce offending.

*Hypothesis 1c*: Among individuals who have strong social bonds, the sanction will reduce future offending.

In addition, analyses will address these hypotheses both cross-sectionally and longitudinally within a life course framework. If defiance is considered to be a process that affects the continuation of offending, the first encounter with police should have an impact on an individual's criminal career. In other words, if an individual perceives a sanction as unfair, is poorly bonded, and/or denies the shame of the sanction, this will affect the processes of continuity and desistance that operate within a person's criminal career.

# Method

## Sample

The data necessary not only to test defiance theory but also to help explain continuity in offending over the life course must contain information regarding the offending behavior of an individual as well as the person's perceptions about his or her encounters with police. Because Sherman (1993) identified longitudinal cohort designs as an appropriate way to test defiance theory, the 1945 Philadelphia birth cohort was used. In the initial data collection effort, researchers selected men with the criteria that they must have been born in Philadelphia in 1945 and that they must have been residents of Philadelphia between their 10th and 17th birthdays (see Wolfgang, Figlio, & Sellin, 1972, for details). The data collected for them initially included only official records. A smaller subsample was later interviewed, and the men were followed until their 30th birthday (see Wolfgang, Thornberry, & Figlio, 1987, for details). Data from follow-up interviews are used in combination with the official crime data from the original cohort study. For purposes of this study, men who had never been in contact with police were excluded from the sample, because contact with a sanctioning agent is a necessary condition when examining the impact of a sanction.[2] Thus, the sample is limited to 212 men who were interviewed in the follow-up and who had come into contact with police at least once. Nearly 70% of the sample was White and 30% was non-White. The total number of official police contacts ranged from 1 to 37, with a mean of 4.19 contacts.

## Variables

As previously noted, the 1945 Philadelphia birth cohort data include information about each sample member's official contacts with police. Because the primary focus of this study is explaining whether or not individuals continue their offending, continuity or involvement in secondary deviance is defined as having two or more official police contacts. Those who had only the one original contact were considered to have not continued or desisted from offending (i.e., not responding with defiance).[3] Information on the total number of police contacts for each sample member and the age of their last official contact are also provided.

In addition to the information collected on official police contacts, researchers asked numerous questions about the individual's first contact with police, including perceptions of his or her treatment at the hands of

police and how the police made him or her feel.[4] Because the four necessary conditions for defiance are that the individual defines the sanction as unfair, is poorly bonded, defines the sanction as stigmatizing, and refuses to acknowledge shame, four dichotomous variables were created to reflect each of these components. If a person identified the treatment as unfair or unjust, he or she was categorized as defining the sanction as unfair (1 = *unfair*, 0 = *otherwise*). A person was categorized as defining the sanction as stigmatizing (1 = *stigmatizing*, 0 = *otherwise*) if he or she said that the police used name-calling or made him or her feel like a delinquent.

Sherman (1993) highlights shame as a key factor in the defiance process. In particular, the refusal to acknowledge the shame that a sanction causes may produce increased offending. Braithwaite (1989) defines shaming as the institutionalized disapproval of crime that may include criticism by any member of the community (e.g., family, friends, criminal justice agents, etc.) that induces feelings of guilt (see also Grasmick, Tittle, Bursik, & Arneklev, 1993; Scheff, 1988). In a test of rational choice theory, Tibbetts (1997) examines the role of shame and comments that shame produces a loss of self-esteem and "a strong desire to hide due to perceptions of how others might view oneself" (p. 235). He measures exposed shame states as the risk and severity of losing self-esteem if a person's criminal behavior was detected by friends and family. Similarly, Cochran, Chamlin, Wood, and Sellers (1999) measure the severity of shame or embarrassment as "how big of a problem would it be for you if most of the people whose opinions matter to you lost respect for you" (p. 95; also see Grasmick et al., 1993, for a similar measure). These definitions and measurement strategies for shame share a focus on the perceived response and disapproval of significant others in the offender's life (see Scheff, 1988). In other words, individuals who care more about how others will react feel more shame. The denial of shame may involve a denial of the importance of others' perceptions.

In this data, denial of shame (DENY SHAME) was measured as a dichotomous variable with 1 representing those individuals who said they feared nothing (e.g., reactions of friends, family, employers, etc.) after their first police contact. Although it is important to recognize that this variable does not directly measure whether the person acknowledged any shame he or she may have felt as a result of their interaction with police, it lies within the spirit of Sherman's (1993) theory and Scheff's (1988) discussion of shame as resulting from the perception that one is negatively evaluated by others. This measure, in particular, captures a rejection of the possibility that others might perceive one negatively, what might be referred to as bypassed shame (Scheff, 1988) or Sherman's (1993) denial of shame.

Defiance theory also requires a measure of social bonding. Unfortunately, the 1945 Philadelphia birth cohort data does not include direct measures of social bonding or stakes in conformity (e.g., employment stability). Although marital status is available in the data, the initial police contact for most men occurred at an age at which the men were very unlikely to have been married. Thus, this variable could not have an impact on secondary deviance as we have defined it. However, the data do include a measure of the highest level of education completed. Therefore, this serves as our proxy for social bonding. Individuals were considered to be well-bonded (1 = *bonded*, 0 = *otherwise*) if they were at least a high school graduate and poorly bonded if they were a high school dropout. Although not ideal, other researchers working with secondary data have used educational attainment as a measure of stakes in conformity and bonding (DeJong, 1997; Sherman, 1992). Hirschi (1969) describes bonding as being "continuously bound to conformity by participation in a conventional game" (p. 163) and notes that higher educational aspirations are related to lower levels of delinquency. Dropping out of school is clearly inconsistent with high educational aspirations and removes at least one conventional activity in which an individual is involved, reducing their stake in conformity. In addition, research suggests that the ultimate dropout decision is reflective of a lengthy process of disengagement, often preceded by poor attendance, academic difficulties, feelings of alienation, and a poor sense of belonging as early as elementary school (Christenson & Thurlow, 2004). Cernkovich and Giordano (1992) note that a lack of attachment and commitment to school increases the likelihood of both dropout and delinquency. In fact, in their study of the relationship between school factors and delinquency, one item in the School Attachment Scale is "I wish I could drop out of school" (p. 270). The measure of actual dropout in the current study is similar and may be interpreted as a proxy for an underlying lack of attachment and commitment to school.[5]

Sherman (1993) argues that all four conditions must occur together in a specified pattern to produce a defiant reaction. Therefore, the four variables described above were combined into one categorical variable reflecting the theory's propositions.[6] The first group includes all men who perceived their treatment as fair (FAIR, $n = 109$). For this group, the effect of the sanction should follow deterrence theory and discourage future offending. The second group includes men who perceived the sanction as unfair but were well-bonded (UNFAIR/BONDED, $n = 57$). For this group, the theory predicts that the sanction may be either a deterrent or irrelevant to future offending because of the value placed on maintaining the social bond.[7] The

third group includes men who perceived their treatment as unfair and/or stigmatizing and were poorly bonded but accepted the shame that the sanction produced (UNFAIR/ACCEPT, $n = 34$). Similar to the second group, Sherman (1993) proposes that the sanction will be irrelevant or even deterrent to future offending. The final group includes those who defined the sanction as unfair and/or stigmatizing, were poorly bonded, and refused to acknowledge the shame the sanction produced (UNFAIR/DENY, $n = 12$). Sherman (1993) hypothesizes that this group is most likely to respond defiantly, resulting in increased or continued offending.

To control for the possible influences of offender's race (1 = *non-White*), IQ, age of onset, and involvement in status offenses, these variables were also included in the analyses. Because some recent research has suggested that individuals with low self-control are more likely than others to interpret sanctions as unfair and respond with anger (see A. R. Piquero, Gomez-Smith, & Langton, 2004), a variable was included to control for this alternative interpretation. Although a direct measure of self-control is not available in the data, an indicator was developed to measure an individual's involvement in five behaviors (breaking curfew, playing hooky, running away, being drunk in public, and sexual intercourse) prior to the age of 18. This measure is in line with Hirschi and Gottfredson's (1993, p. 49) preference for behavioral measures of "criminal, delinquent, and reckless acts" as indicators of low self-control. Alternatively, it is simply a measure of prior offending and is referred to as such in the following analyses.

## Results

### Defiance Conditions and Continued Offending

Defiance theory suggests that the four conditions (perceiving a sanction as unfair, perceiving a sanction as stigmatizing, being poorly bonded, and denying shame) must occur together to produce defiance. Table 1 presents bivariate comparisons for the four theoretical groups specified by Sherman. There were significant differences in involvement in secondary deviance between the groups ($\chi^2 = 8.297$, $p < .05$). As expected, men who defined the sanction as fair were least likely to continue their offending. It was interesting that the group of men who should be most defiant was not. Instead, men who perceived the sanction as unfair or stigmatizing, were poorly bonded, and acknowledged the shame were most likely to continue their offending.

**Table 1**
**Relationship Between Continued Offending and Combined Conditions for Defiance**

| Combined Conditions for Defiance | Continued Offending | Number of Total Contacts | Age of Last Contact |
|---|---|---|---|
| Sanction perceived as fair | 52.3% | 3.28 | 19.54 |
| Sanction unfair, well bonded | 61.4% | 3.07 | 20.60 |
| Sanction unfair, poorly bonded, accept shame | 79.4% | 7.97 | 21.26 |
| Sanction unfair, poorly bonded, deny shame | 66.7% | 7.08 | 22.75 |
| | $\chi^2 = 8.297$* | $F = 8.408$*** | $F = 2.210$ |

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

A similar pattern of results is apparent for the total number of police contacts ($F = 8.408$, $p < .001$). Men who perceived their treatment as fair had the fewest total police contacts. Men who perceived the sanction as unfair or stigmatizing, were poorly bonded, and acknowledged the shame had the greatest number of contacts. The group expected to be most defiant also had a greater number of total police contacts. However, this was not identified as a significant difference in post hoc tests, likely due to the very small sample size of this group. A comparison of age at last contact between the groups produced somewhat different results. Those who perceived their treatment as fair desisted earliest, and the expected group (those who defined the sanction as unfair or stigmatizing, were poorly bonded, and refused to acknowledge shame) desisted latest. However, these differences were not statistically significant.

A logistic regression model predicting continued offending is presented in Table 2. The "sanction perceived as fair" group is the omitted group in the model. Race and status offending significantly predicted continued offending. Contrary to Hypothesis 1a, defining the sanction as unfair or stigmatizing, being poorly bonded, and refusing to acknowledge the shame did not significantly increase the likelihood of continued offending ($b = –0.087$, Wald = 0.016).[8] However, the group that defined the sanction as unfair, was poorly bonded, but did acknowledge the shame had a significantly higher likelihood of continued offending than the group who defined their treatment as fair ($b = 1.053$, Wald = 4.428). The exp(B) of 2.868 indicates that the odds of continued offending were nearly three times higher for this group compared to those who defined the sanction as fair. Although this confirms the bivariate results, the evidence regarding defiance theory remains mixed. Hypothesis 1c is supported in that those with strong social

**Table 2**
**Logistic Regression Predicting Continued Offending With Combined Conditions for Defiance**

| Variable | b | exp(b) | Wald |
|---|---|---|---|
| Constant | –2.034 | 0.131 | 1.359 |
| Non-White | 0.740 | 2.097 | 3.839* |
| IQ | 0.009 | 1.009 | 0.479 |
| Age of first contact | –0.035 | 0.966 | 0.394 |
| Prior status offending | 0.500 | 1.648 | 10.946*** |
| Combined conditions for defiance | | | |
| Sanction unfair, well bonded | 0.228 | 1.255 | 0.399 |
| Sanction unfair, poorly bonded, accept shame | 1.053 | 2.868 | 4.428* |
| Sanction unfair, poorly bonded, deny shame | –0.087 | 0.916 | 0.016 |

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

bonds did not react to a perceived unfair sanction with defiance. However, Hypotheses 1a and 1b were not supported.

## Defiance and Offending Trajectories

The relationship between defiance groups and continued offending is also examined from a longitudinal perspective. Although the logistic regression models discussed above are informative, treating longitudinal data in this way (by making it, in essence, cross-sectional) makes us lose the rich information available throughout the life course and cannot capture individual change (see Laub & Sampson, 2003). Recently, there have been major advances in methodology for analyzing longitudinal data and examining offending trajectories over time (Nagin, 1999; Raudenbush, 2001). Analyses in this study use Hierarchical Linear Modeling (HLM) strategies. The dependent variable in the HLM models is the person-specific number of total police contacts at a given age between 7 and 30. These data are modeled with an overdispersed Poisson distribution to account for the highly skewed nature of the data at any given age.[9]

The first model estimated includes the centered age and age-squared variables at the within-individual level to represent the curvilinear (quadratic) nature of the age–crime relationship. As shown in Equation 1, the specification for the within-individual model is as follows:

$$E(\text{Total Contacts}_{it} \mid \pi_i) = \lambda_{it}$$
$$\log(\lambda_{it}) = \pi_{0i} + \pi_{1i}\,(\text{AGE})_{it} + \pi_{2i}\,(\text{AGE}^2)_{it} + e_{it}, \quad (1)$$

where i is the index for individuals and t is for observations within individuals. The age and age-squared variables are centered on the mean age (18.5). Centering "in the middle" in this way reduces any potential collinearity between the age and age-squared parameters and provides for more stable estimation procedures (Raudenbush & Bryk, 2002). In addition, Raudenbush and Bryk note that this type of centering creates a more meaningful interpretation of the change parameter ($\pi_{1i}$) as the average rate of change during the observation period (also see Laub & Sampson, 2003).

In the between-individual model, both Non-White and Age of First Contact were included as predictors for the average rate of offending ($\pi_{0i}$) and the average rate of change ($\pi_{1i}$). IQ and Prior Offending did not significantly affect average rate of change, so these two variables were excluded from that portion of the model. As shown in Equation 2, the specification for the between-individual control model is as follows:

$$\begin{aligned}
\pi_{0i} &= \beta_{00} + \beta_{01}\,(\text{NONWHITE})_i + \beta_{02}\,(\text{IQ}) + \beta_{03}\,(\text{AGE OF ONSET})_i + \beta_{04}\,(\text{PRIOR})_i + r_0 \\
\pi_{1i} &= \beta_{10} + \beta_{11}\,(\text{NONWHITE})_i + \beta_{12}\,(\text{AGE OF ONSET})_i + r_{1i} \\
\pi_{2i} &= \beta_{20}. \qquad (2)
\end{aligned}$$

In this model, the average rate of offending ($\pi_{0i}$) and age slope ($\pi_{1i}$) are allowed to vary across individuals by including the error term. A fixed effect is assumed for the error term in the age-squared slope ($\pi_{2i}$). IQ, Age of First Contact, and Prior Offending are centered for ease of interpretation. In this model (shown as the control model in Table 3), race affects both the average offending rate and the average rate of change. Being Non-White significantly increases the average offending rate ($\beta_{01} = .714$, $t = 4.112$) and significantly increases the average rate of change ($\beta_{11} = .092$, $t = 3.747$). Being older at the first police contact significantly reduces the average offending rate ($\beta_{03} = -.066$, $t = -2.880$) but increases the average rate of change ($\beta_{12} = .017$, $t = 5.186$). Prior offending significantly increases the average offending rate ($\beta_{04} = .138$, $t = 1.979$).

The model of most interest for the purposes of this article, however, is the one including the combined defiance factor variables. The control variables from the previous model remain in this specification, and dummy variables for three of the categories in the defiance variable were included (the excluded category was "Defining Sanction as Fair"). These dummy variables were allowed to affect both the average rate of offending ($\pi_{0i}$) and the average rate of change ($\pi_{1i}$). The within-individual model described above remains the same. As shown in Equation 3, the between-individual model including the defiance variables is now:

**Table 3**
**Hierarchical Linear Models Predicting Offending Trajectories**

| | Control Model | | | Defiance Model | | |
|---|---|---|---|---|---|---|
| Variable | Coefficient | *SE* | *t* ratio | Coefficient | *SE* | *t* ratio |
| Intercept ($\beta_{00}$) | –1.461 | 0.079 | –18.559*** | –1.536 | 0.101 | –15.145*** |
| Within-individual | | | | | | |
| Age ($\beta_{10}$) | –0.005 | 0.016 | –0.297 | –0.022 | 0.022 | –1.008 |
| Age–squared ($\beta_{20}$) | –0.020 | 0.002 | –12.917*** | –0.021 | 0.002 | –13.029*** |
| Average offending rate | | | | | | |
| Non–White ($\beta_{01}$) | 0.714 | 0.174 | 4.112*** | 0.548 | 0.169 | 3.244** |
| IQ ($\beta_{02}$) | –0.012 | 0.006 | –1.903 | –0.009 | 0.005 | –1.602 |
| Age of first contact ($\beta_{03}$) | –0.066 | 0.023 | –2.880** | –0.060 | 0.023 | –2.633** |
| Prior status offending ($\beta_{04}$) | 0.138 | 0.070 | 1.979* | 0.128 | 0.066 | 1.944 |
| Sanction unfair, well bonded ($\beta_{05}$) | | | | –0.088 | 0.139 | –0.630 |
| Sanction unfair, poorly bonded, accept shame ($\beta_{06}$) | | | | 0.569 | 0.193 | 2.946** |
| Sanction unfair, poorly bonded, deny shame ($\beta_{07}$) | | | | 0.574 | 0.406 | 1.414 |
| Average rate of change | | | | | | |
| Non-White ($\beta_{11}$) | 0.092 | 0.025 | 3.747*** | 0.111 | 0.024 | 4.536*** |
| Age of first contact ($\beta_{12}$) | 0.017 | 0.003 | 5.186*** | 0.017 | 0.003 | 5.174*** |
| Sanction unfair, well bonded ($\beta_{13}$) | | | | 0.044 | 0.025 | 1.764 |
| Sanction unfair, poorly bonded, accept shame ($\beta_{14}$) | | | | –0.039 | 0.024 | –1.627 |
| Sanction unfair, poorly bonded, deny shame ($\beta_{15}$) | | | | 0.111 | 0.067 | 1.660 |
| Variance components | | | | | | |
| Within-individual | | 0.673 | | | 0.681 | |
| Between-individual | | 0.556*** | | | 0.524*** | |
| Age slope | | 0.018*** | | | 0.018*** | |
| Likelihood function | | –8323.157 | | | –8345.107 | |

Note: The defiance model is a significant improvement over the control model ($df = 6$, $\chi^2 = 43.90$). *$p < .05$. **$p < .01$. ***$p < .001$.

$$\pi_{0i} = \beta_{00} + \beta_{01}\,(\text{NONWHITE})_i + \beta_{02}\,(\text{IQ}) + \beta_{03}\,(\text{AGE OF ONSET})_i + \beta_{04}\,(\text{PRIOR})_i + \beta_{05}\,(\text{UNFAIR/BONDED})_i + \beta_{06}\,(\text{UNFAIR/ACCEPT})_i + \beta_{07}\,(\text{UNFAIR/DENY})_i + r_0$$
$$\pi_{1i} = \beta_{10} + \beta_{11}\,(\text{NONWHITE})_i + \beta_{12}\,(\text{AGE OF ONSET})_i + \beta_{13}\,(\text{UNFAIR/BONDED})_i + \beta_{14}\,(\text{UNFAIR/ACCEPT})_i + \beta_{15}\,(\text{UNFAIR/DENY})_i + r_{1i}$$
$$\pi_{2i} = \beta_{20}. \qquad (3)$$

UNFAIR/BONDED represents those individuals who define the sanction as unfair and/or stigmatizing but are well bonded. UNFAIR/ACCEPT represents those who defined the sanction as unfair and/or stigmatizing, are poorly bonded, but accept the shame, and "UNFAIR/DENY" indicates

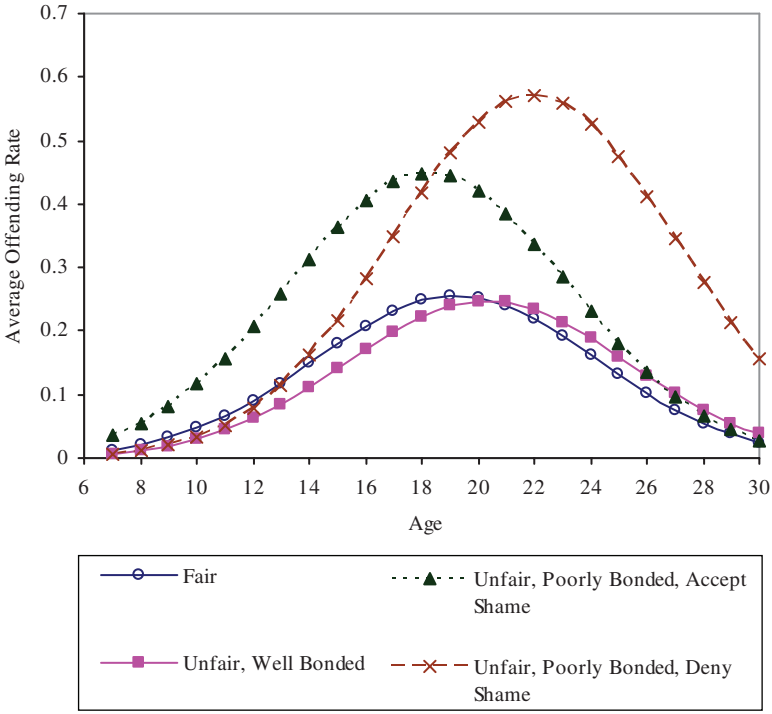
those who defined the sanction as unfair and/or stigmatizing, are poorly bonded, and deny the shame. The impact of the control variables remains the same as in the previous model. In addition, defining the sanction as unfair, being poorly bonded, and accepting the shame significantly increases the average offending rate ($\beta_{06}$ = .569, $t$ = 2.946). Although Hypothesis 1b suggests that the sanction should be irrelevant or deterrent for this group, these results indicate more of a defiance effect. The group expected to be most defiant (those who define the sanction as unfair, are poorly bonded, and reject the shame of the sanction) also have a greater average offending rate compared to the excluded category ($\beta_{06}$ = .574, $t$ = 1.414), but this coefficient is not statistically significant. Although Hypothesis 1a is not supported in this model, the lack of statistical significance in this analysis may again be related to the small sample size for this group. In the HLM models, adding the defiance variables as a block significantly improved model fit over the control model ($\chi^2$ = 43.90, $df$ = 6).[10]

These findings are represented graphically in Figure 1, which perhaps communicates the defiance story more effectively than the quantitative results. This figure presents the predicted average offending rate by age for each of the four groups. For the first two groups (defining the sanction as fair vs. unfair but well bonded), there is little difference in the predicted trajectories of offending over the life course. This appears to demonstrate the irrelevance of the sanction for this group. The group that defines the sanction as unfair, is poorly bonded, and accepts the shame has a higher peak average offending rate, and the peak occurs somewhat earlier in the life course compared to the other groups. All three of these groups desist to the point that they look very similar from about the age of 24 on. Although the final group (defining the sanction as unfair, being poorly bonded, and denying the shame) looks very similar to the other groups early in the life course, the peak average offending rate occurs later and is much higher. In addition, this group desists but does not return to the same level as the other three groups. Although not statistically significant, this pattern is what Sherman would anticipate.

## Discussion and Conclusion

This study provides the first attempt to test Sherman's (1993) defiance theory in a more complete fashion than has heretofore been possible. Although previous studies have examined pieces of the theory or interpreted results in ways supportive of the theory, the analyses presented here

**Figure 1**
**Predicted Average Offending Rate by Age for Sherman's Groups**




have addressed the four key features of defiance and done so in a longitudinal framework. In both types of analyses presented (cross-sectional and longitudinal), the evidence supporting defiance theory is mixed. The groups primarily characterized by defining the sanction as unfair and being poorly bonded experienced higher rates of offending and slower desistance over the life course as compared to those who perceived their treatment as fair or were well bonded.

A strict reading of defiance theory is not completely supported by these results. In particular, defiance theory proposes that the sanction will be irrelevant or deterrent to future offending for individuals who define the sanction as unfair, are poorly bonded, but accept the shame of the sanction. Results presented here indicate that the sanction actually has a defiant effect for this group, increasing the likelihood of secondary deviance in the logistic

regression models and increasing the average offending rate in the dynamic HLM models. These results may suggest that accepting or denying the shame of the sanction is not the key feature determining whether defiance occurs. Rather, defining the sanction as unfair and being poorly bonded are more central determining factors. If that is the case, these results may actually provide more support for the propositions of Braithwaite's (1989) reintegrative shaming theory. However, Figure 1 suggests that there may still be an important role of denying shame in determining offending trajectories. Although both groups who define the sanction as unfair and are poorly bonded have higher average offending rates, those individuals who deny the shame of the sanction have the highest offending rates, peak later in the life course, and desist at a much slower rate than the group that accepts the shame of the sanction. Future research must more closely examine the role of shame.

Although at first glance it might appear that social bonding and low self-control theories could better account for persistence in offending than defiance theory, digging into the details reveals that this is not necessarily the case. Without a doubt, social bonding theory is not only incorporated into defiance theory but is a critical part of it.[11] However, the social bond is not the whole story as far as defiance theory is concerned. Sherman (1993, p. 460) very clearly articulates that one of the necessary conditions for defiance to occur is that the offender must be poorly bonded to society. However, the key causal mechanism in defiance theory (which separates it from a social bonding explanation) is the dynamic nature of the emotional response, namely shame, combined with the strength of an individual's bonds to society. Although the role of shame remains cloudy in this data, it remains the distinguishing feature of Sherman's theory and should be examined more closely and with more direct measures than those available here.

Another possible interpretation of our results could be that we find support for self-control theory rather than for defiance theory. Because A. R. Piquero and his colleagues (2004) found that individuals with low self-control are more likely to perceive sanctions as unfair and are likely to respond with anger, it is possible that measures of perceived injustice as well as emotional responses to sanctions could be interpreted as proxies for low self-control. In an attempt to control for this rival explanation, we included a behavioral measure into all of our model estimations. We find that self-control (as indicated by prior status offending) is a significant predictor of continued offending in our cross-sectional defiance models; however, in our longitudinal defiance analysis, we find that prior status

offending is no longer a significant predictor. Supplementary analysis[12] revealed that prior status offending appears to operate through the defiance variables, as suggested by A. R. Piquero and colleagues (2004). That is, individuals with low self-control (i.e., involvement in status offenses) are more likely to perceive sanctions as unfair. Although there appears to be overlap among these theories, each independently contributes to our understanding of continuity.

These results suggest that defiance theory may provide some insight into the processes of persistence and desistance in offending over the life course. Sampson and Laub (1993, 1997) and Moffitt (1993) both describe processes of "cumulative continuity" in offending. For Sampson and Laub (1997), initial offending reduces conventional opportunities and results in association with delinquent peer groups. These factors are presumed to influence continued offending. Similarly, for Moffitt's life course persistent offenders, continued offending is theorized to be a function of the interaction of criminogenic traits and reduced opportunities for conventional activities, educational and occupational attainment, and association with prosocial peers that occur as a result of antisocial behavior. However, interactions with the criminal justice system may also play an important role in the continuity in offending.

Sherman's (1993) defiance theory may fit well into these explanations of "cumulative continuity." Laub and Sampson (2003), in their large-scale follow-up of 500 Boston area delinquents, discuss the role of defiance in offending careers. In some of their qualitative interviews, Laub and Sampson (2003, pp. 164-166, 184-185) report that several of the men, including "Boston Billy" believed that they were treated unfairly by the criminal justice system and had a defiant stance toward authority. As Laub and Sampson (2003) surmise, "men's defiance may have been fueled by a perceived sense of injustice resulting from contact with officials of the criminal justice system. Many persistent offenders see the system as unfair and corrupt" (p. 184). Thus, in addition to reduced conventional opportunities, individuals may also be responding to the perceived unfairness of their treatment at the hands of authorities.

This highlights one important element of defiance theory that also appears in Braithwaite's (1989) reintegrative shaming approach and in Tyler's (1990) focus on procedural justice, and that is the clear policy relevance of these perspectives. In particular, if defiance is spurred by perceptions of unfairness and stigmatizing punishment by the police, as these results suggest, law enforcement officials would be well served to consider ways to legitimize their authority by enhancing perceptions of equitable

and even-handed treatment among citizens. In particular, Tyler and Wakslak (2004) note that the public's view of fairness is related to their perceptions that the police are operating in a neutral and consistent manner, are treating citizens with respect, and are trustworthy. Concerns about issues such as racial profiling and excessive use of force diminish the public's trust in the police and their perceptions that the police are operating fairly. Tyler and Wakslak also comment that, in the case of racial profiling, reducing the actual occurrence of biased policing is one necessary, but not sufficient, step in improving relationships between the police and the community. Police must also strive to change the community's interpretations of police motives. Policing has changed much in the years since the individuals in this study came into contact with law enforcement officers. The turn to community and problem-oriented policing strategies and the use of programs like Compstat to track citizen complaints may help to enhance public perceptions of police legitimacy and accountability (Moore & Braga, 2003; Walsh, 2001). By extension, defiance theory would argue that, in addition to improved police–community relations, enhancing perceptions of police fairness would be a step toward achieving a more deterrent effect of police encounters.

## Limitations and Future Research

This effort is one of the first empirical examinations of Sherman's (1993) defiance theory and the first to do so in a longitudinal fashion, but due to several data limitations, it is not the final word. It is important to note that this cohort is somewhat dated, and police–citizen interactions may have changed a great deal since the 1950s and 1960s, as noted above. However, much of value can still be learned from older data (see, e.g., Laub & Sampson, 2003; Sampson & Laub, 1993). Although it is true that things may have changed since these individuals were exposed to sanctions, the ultimate question is whether unfair, stigmatizing sanctions will still produce defiant reactions among poorly bonded individuals who do not feel shame. There is some suggestion in these analyses that this process (at least in part) does occur. As with all tests of theory, it is important for future research to attempt to replicate these results to determine whether they and the theory are generalizable across time and place. The small sample size was also a limitation for the current study. Multivariate modeling does somewhat mitigate this issue, but it would be important for future studies to examine larger samples.

Variable measurement presents some additional limitations. Although the 1945 Philadelphia birth cohort includes a number of relevant variables not available in any other existing data source, it does not allow for a complete or ideal test of defiance theory. For example, some indicators do not entirely capture the necessary variables. Analyses were hampered by a lack of sufficient variables representing bonding, and future research in this area would be well served to examine additional measures of bonding. Although the measure of denying shame used in this study (whether the individual feared anything after their first contact) lies within the spirit of the theory, it does not directly measure whether the person acknowledged any shame that he or she felt. This may account for the failure to support hypotheses addressing the role of shame in the defiance process. In addition, the indicators used in this study were mainly single-item indicators. Future studies should design measurement strategies to specifically reflect the key elements of defiance theory and should examine multiple indicators of the various constructs. Because key measures of defiance theory do not exist in any publicly available data set, this preliminary investigation should be viewed as a guide to future research on defiance theory and should support researchers' serious consideration of obtaining more and better measures of the key defiance variables. Defiance theory also focuses clearly on an individual's perceptions of their treatment and their own response to shaming. The use of more in-depth interview techniques and qualitative data would also add a great deal to the understanding of when defiance or deterrence is likely to occur in response to a criminal justice sanction.

Another intriguing direction for future research concerns the longitudinal relationships between defiance and criminality. Some may argue that defiance should be interpreted as a theory of criminal events. Thus, experiences and reactions to one's sanctioning experience would affect the subsequent criminal event but not necessarily an individual's overall offending trajectory. This perspective highlights a question of the stability of defiant reactions over time and the role of any given sanction in the overall offending pattern. Sherman (1993) states that "defiance explains variation in criminal events, not criminality" (p. 459) but does not comment on the stability of defiance over time or how defiant attitudes may change. However, future research must recognize that for persistent offenders especially, sanctions are not single events. Rather, these individuals interact with the criminal justice system in multiple ways at various ages throughout the life course. This study examined the impact of a first police contact on subsequent offending, because all of the relevant variables used in the analyses were

available for the first contact but not for subsequent contacts or for individual arrests or convictions. It is possible that defiance is a cumulative process occurring over several interactions with the criminal justice system. It may also be important to examine whether the extent of involvement in the criminal justice system (i.e., contact vs. arrest, conviction, incarceration, etc.) affects defiance. In addition, the type of offense for which the individual is being sanctioned may play a role. Thus, future research must examine the multiple sanctions that an offender experiences over their life course and the specific nature of those sanctions and whether a given sanction exerts a lasting impact on offending trajectories.

In addition to considering the stability of defiance and the potential cumulative impact of repeated interaction with the system, it will be of interest to examine how perceptions of unfairness, social bonding, and acceptance of shame change in response to criminal activity and sanctions experienced over time. In this study, it is important to recognize that the questions related to an individual's perceptions of his or her first contact with police were asked at a later follow-up interview, often decades after the event. Although there is some evidence that people are able to recall salient events in their lives and their corresponding emotions (see Henry, Moffitt, Caspi, Langley, & Silva, 1994; Loewenstein, 1996), it is also possible that a person's life experience may color their recollection of their interactions with police. For example, a persistent offender may look back on their first police contact as the beginning of a downhill slide and believe that it must have been a negative experience, reporting that he or she was treated unfairly. However, someone who desists may later come to view the first police contact as a beneficial turning point in his or her life. Thus, it would be important to examine immediate perceptions of sanctions as they are applied and to examine whether and how those perceptions change over time. Collection of time-varying defiance perceptions is no small task, as no current data contain such measures. Future tests of defiance theory from a longitudinal framework must incorporate measures of perceptions as each sanction is applied throughout the life course.

This study has demonstrated the relevance of defiance theory in predicting continuity of offending in a life course framework. Although this is not an ideal test of defiance and much work still must be done, it is the best test possible with the available longitudinal data. Results provide suggestive evidence in favor of the basic tenets of defiance theory. Like other early tests of theories (see Paternoster et al., 1997; Paternoster & Piquero, 1995), the results of this study should be considered an important first step toward a more comprehensive evaluation of defiance theory.

# Notes

1. Sherman's (1993) theory may also be viewed in light of some existing work within psychology on such factors as grandiosity and negative emotionality. For example, grandiose or self-centered individuals may be more likely to reject the sanctioning agent and the shame associated with being sanctioned, resulting in a defiant response (also see Gottfredson & Hirschi, 1990; A. R. Piquero, Gomez-Smith, & Langton, 2004). Caspi and colleagues (1994) also suggest that individuals with high levels of negative emotionality "have a low general threshold for the experience of negative emotions . . . and tend to break down under stress." (p. 169). Although not specifically addressed by Sherman (1993) or necessarily intended, the advantage of defiance theory is in linking concepts, such as emotion and social bonding, and producing an integrated criminological theory that accounts for either deterrence or defiance and deviance amplification. We thank a reviewer for their perspective on this topic.

2. Although the inclusion of a control group of individuals who had not been sanctioned would provide a stricter test of defiance theory by exploring whether continued offending is merely the result of being sanctioned or is truly a result of Sherman's defiance factors, the use of official data does not allow for this possibility within the current analyses. Data on perceptions of a sanction would be missing for all those not sanctioned, and data on the outcome variable would also be missing. This would be possible with the right type of self-report data, but in the current study, such data were gathered cross-sectionally (i.e., "How many times did you do X before the age of 18 and after the age of 18?") and thus cannot be linked to specific ages or sanctions.

3. Sherman (1993) does distinguish three potential responses to a sanction: defiance, deterrence, and irrelevance. Methodologically, irrelevance is difficult to operationalize in a distinct manner. For the purposes of this study, analyses will explore continued offending versus desistance.

4. Some readers may initially be concerned about an individual's recall of an emotional feeling occurring several years earlier. Although this is certainly an issue, researchers working in the emotions and recall area indicate that certain feelings associated with a salient life event, such as a first police contact, can be recalled quite vividly, and the emotion can be conjured up in the mind easily (Henry, Moffitt, Caspi, Langley, & Silva, 1994; Loewenstein, 1996).

5. Although the variables used here are single-item measures and not ideal tests of the underlying elements of the theory, key measures of defiance theory do not exist in any publicly available data set. Important information can be garnered from the analyses presented here, but this preliminary investigation should be viewed as a guide to future empirical tests of the theory rather than as the ultimate test itself.

6. This combined variable does not represent a classic statistical interaction and is not treated as such in subsequent analyses. Rather, Sherman (1993) has made specific predictions about clusters of characteristics that produce defiance, deterrence, and/or irrelevance. Thus, this variable groups individuals into discrete, exhaustive, and mutually exclusive categories consistent with theoretical expectations.

7. Due to concerns about sample size and an inability to operationally distinguish deterrence and irrelevance, this group was not further divided by acknowledgement or denial of shame in the current study. Results from a supplemental analysis using this distinction (available on request) did not differ substantially from those presented here.

8. One potential explanation for the null findings in this analysis is the small sample size ($n = 12$) of the group expected to be most defiant (defining the sanction as unfair, being poorly bonded, and denying the shame of the sanction).

9. Some might inquire (as one reviewer did) as to why a negative binomial model was not used. Practically, the HLM program does not include an option for negative binomial modeling. However, the overdispersed Poisson regression including error terms used in these analyses is

very similar to a negative binomial model. The negative binomial is a Poisson-based regression model that allows for overdispersion, and HLM accounts for overdispersion in the data by incorporating a scale parameter to adjust the standard errors. Both also incorporate an error term representing unexplained variation. The difference between the models lies in the underlying assumptions, which are somewhat more restrictive for Poisson regression.

10. One reviewer raised an important point that the defiance process may unfold differently depending on the type of offense for which an individual is sanctioned. Although the small sample size in some cells precludes a separate analysis by crime type, the existing model was estimated again including a dichotomous variable for whether the current offense was an index offense. The offense variable was not statistically significant, and the other coefficients were unaffected (results available on request). This remains, however, an interesting question for future studies.

11. There are substantial similarities between social bonding and defiance theory. For example, defining sanctions as unfair overlaps with the control theory concept of belief. Viewing sanctions as stigmatizing and accepting the shame produced by sanctions are also conditions similar to control theory concepts such as attachment and belief. Those that are sensitive to the opinions of others are probably more likely to accept the shame and stigma of sanctions than those who are not; individuals who have trust or faith in conventional rules are also more likely to accept shame and stigma of sanctions than those who do not. We would like to thank a reviewer for bringing this to our attention.

12. This is available on request.

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