

Measuring the Contextual Effects and Mitigating Factors of Labeling Theory

Emily Restivo and Mark M. Lanier

Despite the longevity of labeling theory, there remains a need for further empirical validation. We examine three ways that official intervention may lead to secondary (that which occurs following the fixation of a label) deviance: self-concept, pro-social expectations, and association with deviant peers. We examine a sample of labeled and non-labeled individuals, utilizing data from the Children at Risk study. Based on our analytical view of a three-year panel of 677 randomly selected juveniles,

Keywords criminological theory; labeling theory; children at risk (CAR); delinquency

Emily Restivo is an assistant professor of Criminal Justice and Sociology at the New York Institute of Technology, USA. She received her PhD in Criminology from the Florida State University in 2011. Her primary research interests center on the impact of formal labeling on subsequent criminal behavior as well as the effect of parenting on crime and delinquency. She has published work in *Criminal Justice and Behavior*, *Crime and Delinquency*, and *Youth Violence and Juvenile Justice*. Mark M. Lanier received his interdisciplinary doctoral degree from the Michigan State University with concentrations in Criminology, Sociology, and Psychology. He is currently a professor and chair of the Department of Criminal Justice at the University of Alabama (Tuscaloosa). He has over 60 scholarly publications and recently completed *Research Methods in Criminal Justice and Criminology: A Mixed Methods Approach* (2012) for Oxford University Press with Lisa Briggs and *Essential Criminology* co-authored with his mentor Stuart Henry, which is in the 4th edition (2013) with Desire' Anastasia. Correspondence to: M.M. Lanier, Criminal Justice, University of Alabama, PO Box 870320, Tuscaloosa 35487, USA. E-mail: mmlanier@as.ua.edu

Introduction

Labeling theory is one of the relatively older theoretical explanations for delinquency. Despite its longevity, empirical validation and scholarly support have been mixed (Goode, 1975). After its inception, labeling theory did not fare well under empirical examination; however, contemporary examinations have provided robust support (Lanier & Henry, 2010). Despite this, subsequent empirical and theoretical questions remain. Inadequate methodologies (primarily poor research samples) resulted in limited definitive conclusions, and have hindered theoretical development, for example, the actors need to be considered as more than passive receptors of a label and instead be viewed as active participants. Thus, while the theory has conceptually withstood scrutiny, empirical confirmation is less robust. This study relies on improved sampling strategies and a unique conceptualization of mitigating factors to assist with answering those queries.

The theory suggests that formal reactions to crime will become a stepping-stone in the development of a criminal career (Becker, 1963; Lemert, 1967; Tannenbaum, 1938) and escalate antisocial behaviors. Lemert (1951, 1967) and Becker (1963) argued that labeling theory is progressive and social. In fact, "social interactions with others is important in shaping whether people eventually become offenders. Humans are not passive but are actively engaged with others in the construction of their social identities and in creating the meaning of their world" (Lanier & Henry, 2010, p. 206). Lemert (1951, 1967) elaborated on the labeling process when he coined the terms *primary* and *secondary* deviance. He suggested that primary deviance is normal adolescent behavior, but the labeling of such behavior as "delinquent" will often lead to secondary deviance, or that the labeling of primary deviance as "delinquent" will lead to secondary deviance because the "person becomes the thing he is described as being" (Tannenbaum, 1938, p. 20). Further, scholars (see Liska & Messner, 1999) have highlighted the social processes through which formal labeling positively (increases) affects future criminal behavior. Thus, an issue that deserves more attention is examination of variables that may mediate the association between official sanctioning and subsequent engagement in crime and delinquency. This paper examines the extent to which the relationship between formal labeling and subsequent criminal behavior is mediated by variables including self-concept, pro-social expectations and associations with deviant peers.

Bernburg, Krohn, and Rivera (2006) indicate that researchers have rarely studied the presence of intermediate processes that may intervene between deviant labeling and subsequent involvement in crime and deviance. Attention to this issue is important, given that any effect of labeling almost certainly is indirect; for instance, interaction with the criminal justice system should have an effect on an individual's identity, values, associations, or commitments that in turn generate a movement towards greater crime and deviance (Bernburg

et al., 2006; Bernburg & Krohn, 2003; Paternoster & Iovanni, 1989; Sampson & Laub, 1997). Bernburg’s research (2009) suggested that there are three main processes through which labeling influences future behavior: through the development of a deviant self-concept; through processes of social rejection and withdrawal; and through involvement with deviant groups.

Although the theoretical roots of pro-social expectations and self concept may stem from different origins, each variable is theoretically compatible with the effect of official intervention on subsequent involvement in crime and deviance (Lanier & Henry, 2010). This is understandable because official labeling can stigmatize an individual in ways that may “push” them away from conventional society, which will then negatively impact many areas of an individual’s opportunities and available choices.

One purpose of this paper is thus to advance the current theoretical conceptualizations by considering the possibility of mediating effects on the association between that of official intervention and subsequent deviance. Following a synopsis of labeling theory, and a description of methods employed, we present an ordinary least squares (OLS) analysis of the independent effect of official sanctioning by the criminal justice system on subsequent crime and deviance. Data from the Children at Risk (CAR) (Harrell, Cavanagh, & Sridharan, 1999) study is analyzed to test for these effects. We present a revised model of labeling that better depicts the complicated association between formal labeling and subsequent delinquent behavior, and conclude with suggestions for further empirical validation of this revision.

Prior Literature and Research

Labeling theory predicts that formal punishment stigmatizes an offender in a way (or ways) that often will have the unexpected consequence of amplifying future delinquent behavior. After the initial act is reacted to by government players (representing official agencies), formal criminal justice intervention likely results in a negative self-concept, blocked opportunities and great likelihood of associations with other “delinquents.” Figure 1 outlines this hypothesized sequence.

Contrary to the presumed *intent* of criminal justice intervention, the labeling of offenders actually contradicts the notion that punishment decreases the likelihood of engaging in subsequent delinquency, since more illicit acts are likely to occur following the label being internalized by the subject. Paternos-

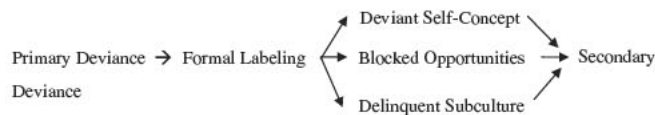


Figure 1 Labeling causal process diagram.

ter and Iovanni (1989) emphasize that formal labeling of delinquent behavior should not directly lead to future criminal behavior. Instead, they suggest that formal labeling significantly affects the *likelihood* of engaging in secondary deviance through a number of key mechanisms. The most prominent of these mediating variables includes a delinquent self-identity transformation (Matsueda, 1992) relative to self concept, blocked opportunity structure (Bernburg & Krohn, 2003), and social exclusion from conventional others due to deviant subculture associations (Bernburg et al., 2006).

Self Concept

A conclusion that can be tentatively drawn that processing juveniles through the criminal justice system is likely to produce a negative effect on the adolescent's self-concept (Farrington, 1977; Garfinkel, 1956; Jensen, 1972; Kaplan & Johnson, 1991; Schwartz & Skolnick, 1962). For example, Schwartz and Skolnick (1962) found that the criminal justice process will often result in a negative effect on an individual's self-concept, particularly that of juvenile delinquents. Likewise, Jensen (1972) found that formally labeled adolescents have a more delinquent self-identity than adolescents who have never been labeled. Thus, following formal intervention, the labeled individual often comes to see himself or herself as a "delinquent" or "criminal." Moreover, research has also indicated that a delinquent self-identity often generates more delinquent and harmful behavior. For example, in a recent longitudinal study, researchers found that those who had reported negative self-concept (e.g. perceived themselves to be "disobedient" or "unfriendly") at age 12 were more likely to be substance-dependent at age 20 (Taylor, Lloyd, & Warheit, 2005). Matsueda (1992) suggests that formal labeling segregates individuals from achieving conventional means of success. In other words, stereotypes that are associated with the word "criminal" become the defining characteristics of an individual following formal intervention with the criminal justice system. Thus, family, friends, teachers and potential employers perceive the labeled individual to be someone who is a delinquent. Subsequently, these conventional individuals respond to the labeled individual with a stigmatization process, which includes a denial of conventional opportunities such as education advancement and employment positions. In fact, the notion that employment opportunities become limited after a potential employer discovers that an individual has a prior criminal record which has been documented previously (Davies & Tanner, 2003; Pager, 2003; Western, 2002).

Blocked Opportunities

Similar to these conclusions, Bernburg and Krohn (2003) hypothesized that deviant labels assigned to individuals may influence subsequent deviance by altering not only the person's self-concept but also the tangible aspects of

social exclusion. They found that official intervention decreases the likelihood of high school graduation and is significantly associated with an increased likelihood of engagement in serious crime in early adulthood. Therefore, the social marginalization experienced by labeled individuals, including an exclusion or expulsion from conventional schools, will increase the likelihood of engaging in more crime and delinquency in the future (Bernburg & Krohn, 2003). These results support the notion that official intervention, or formal labeling, increases involvement in crime and deviance due to the negative effect it has on an individual's prosocial opportunity structure.

In short, prior research supports the notion that the stigmatization of labels can exclude individuals from mainstream opportunities such as education and employment (Bushway, 1998; Davies & Tanner, 2003; Farrington, 1977; Hagan, 1991; Lanctot, Cernkovich, & Giordano, 2007; Tanner, Davies, & O'Grady, 1999) and can result in detrimental and unintended effects. In turn, it is plausible to accept the notion that conventional others often respond to the labeled individual with mistrust, reservation, and caution because he or she is now perceived to be a "criminal" and/or dangerous. The stigmatizing preconceptions towards a criminal offender will result in a blocked opportunities and negative perceptions for future success for the labeled individual. To verify this however demands examination of many external actors.

Deviant Subculture

Research indicates that the consequences of deviant labeling generate processes leading to increased involvement with deviant peer groups (see Bernburg et al., 2006; Johnson, Simmons, & Conger, 2004; Zhang & Messner, 1994). Johnson et al. (2004) assessed the role of involvement with the criminal justice system on subsequent offending. Using seven waves of data from the Iowa Youth and Families Project, they found that involvement with the criminal justice system was positively related to subsequent crime and deviant peer association. Kaplan and Johnson (1991) generated similar conclusions.

Fewer studies have examined the mediating role of delinquent peer associations on being formally labeled and subsequent crime and deviance. Bernburg et al. (2006) did find that juvenile justice interventions lead to an increase in deviant peer network embeddedness, which in turn increases involvement in crime. In fact, results indicate that delinquent peer associations accounted for nearly half of the direct effect of formal intervention on future delinquency. The authors suggest that the social learning process, as described by differential association theory, plays a vital role in the hypothesized labeling process (Bernburg et al., 2006). Moreover, Bernburg (2009) argues that the stigma attached to deviant labels can stir up the processes that lead to exclusion from relationships with conventional others. Thus, it is plausible that formally labeled individuals will turn to one another as a means of escape as well as for security and acceptance. A delinquent subculture will secure the labeled

individual's deviant identity, which will then lead to an increased likelihood of engaging subsequent criminal behavior.

Problem Statement: Sampling and Related Methodological Shortcomings of Research

Although some studies have examined the various effects and consequences of official intervention (see Bernburg et al., 2006; Bernburg & Krohn, 2003; Paternoster & Iovanni, 1989) prior research exhibits limitations. Bernburg and Krohn (2003) indicate that prior studies of the formal labeling process are lacking in the following ways: the sample typically includes only individuals who have experienced formal labeling; most studies are cross-sectional (or have a relatively short follow-up period); and they often ignore the possibility of contingent or mediating relationships between past and future delinquency. Each of these issues creates methodological limitations, and in turn, each has the potential to account for overestimates (or underestimates) of the direct effect of formal labeling on subsequent delinquency.

However, the prime deficiency common in prior research is grounded in sample selection. When a study uses a sample consisting of *only* individuals who have been formally labeled by the criminal justice system, it is impossible to assess the absolute effects of formal labeling. Therefore, in order to study the absolute effects of the labeling process, it is necessary to employ a sample that includes both labeled and non-labeled individuals. Paternoster and Iovanni (1989) noted that samples of individuals are too often drawn from police records and other non-random samples. A non-random sample is also considered problematic because it is not possible to generalize results beyond those individuals whom were included in each sample. Therefore, it is important for labeling studies to include a random sample of both labeled and non-labeled individuals.

Some studies have considered mediating variables while addressing these limitations (Bernburg et al., 2006; Bernburg & Krohn, 2003; Sampson & Laub, 1997). It bears emphasizing that two of the most influential of such studies were conducted with the same dataset from the Rochester Youth Development Study (see Bernburg et al., 2006; Bernburg & Krohn, 2003). Therefore, it is advantageous for future examinations to move beyond the datasets that have been employed in previous labeling studies. Additionally, although mediating variables have been considered in prior research, they have rarely been considered within the same study. Therefore, the goal of this paper is to address the issues mentioned above in order to better capture and understand the relationship between official labeling and subsequent involvement in crime and delinquency. More specifically, the purpose of this study is to address the relationship between official labeling and subsequent delinquency with data and measures that address the limitations of prior research.

Methodology

Although previous studies have examined the mediating effects of specific variables (Bernburg et al., 2006; Bernburg & Krohn, 2003), the literature has largely ignored the simultaneous effects of these mediating variables on subsequent involvement in delinquency. We will first consider the independent effect of official intervention on subsequent involvement in delinquent behavior. The second research question explores the possibility that the effect of formal intervention on subsequent delinquency is mediated by a number of variables that may explain the effects of labeling, including self-concept, association with deviant peers, and prosocial expectations.

Data

The present analysis used data generated by the CAR study (Harrell et al., 1999). CAR is a three-wave panel data set derived from interviews conducted between January 1993 and May 1997. To help confirm causal impact time frames are relevant. Data were collected in face-to-face interviews with the adolescent at three points in time: at baseline (between random assignment and the start of the program), at the end of the program (two years later), and at follow-up (one year after program completion). More specifically, baseline interviews with youths and caretakers took place between January 1993 and May 1994, during the month following recruitment when subjects were approximately 12 years old. The second wave of interviews took place two years later between December 1994 and May 1996, when the subjects were approximately 14 years old. The final set of data was collected one year later between December 1995 and May 1997 when the respondents were about 15 years old. The response rates were relatively high—98% at baseline, 77% at wave 2, and 76% at wave 3 (see Harrell et al., 1999).

For youths to be eligible for participation in the CAR program, they had to have been between the ages of eleven and 13, and attending 6th or 7th grade, and fit the target criteria regarding neighborhood, school, and family risk factors. It is important to note that although the sample is considered "high-risk," the absolute effect of labeling can still be ascertained since the sample includes individuals who have, and have not, been formally labeled. This is beneficial because prior studies have often exclusively focused on the relative effects (only on samples already labeled) while neglecting to examine the absolute effects of the formal labeling process.

The CAR data set includes general demographic measures and measures of interaction with the criminal justice system as well as subsequent involvement in delinquency. The data employed in the current study is of great utility because of the availability of a wide variety of items pertaining to potential *causes* of deviance, including those that are relevant to the respondent's self-concept, pro-social expectations, and deviant peers. Moreover, in addition

to the wide range of available items, the data is particularly suited for this type of analysis because of its three-wave longitudinal design. The labeling process culminates *over time* and so it is plausible that the effects of formal labeling are not immediate, but take place over time. Therefore, an assessment of labeling theory must employ longitudinal data in order to model the sequential nature of the process. This study employs all three panels of CAR data with the dependent variable (subsequent deviance) coming from wave 3 and the independent variable (intervention with the CJ system) coming from wave 2. Each of the mediating variables is from wave 3 as well, while the control variables (including prior delinquency, age, race and gender) are collected from wave 1.

Formal Labeling Measure

Three different measures of involvement with the formal criminal justice system were available in the CAR data. These individual measures include how often, in the past two years, the subject had been arrested, had been to court, and had been held in jail or juvenile detention. However, following formal intervention with the criminal justice system (whether that be arrest, court appearances or jail/juvenile detention), individuals will likely experience similar stigmatization due to official labeling. Therefore, in order to prevent repetition of the results, we only make use of the measure of "arrest."

Arrest was measured with dichotomous self-reported item that asked subjects whether they had been arrested since the last interview (two years earlier). Responses were coded as "1" if the individual had been arrested and as "0" if they have not been arrested. This measure of official action closely matches the measures used in recent assessments of the effects of official labeling (e.g. Bernburg et al., 2006; Bernburg & Krohn, 2003). Preliminary analyses reveal that nearly a quarter (23%) of the sample reported, during the second wave of interviews, that they had been arrested at least one time in the previous two years.

Subsequent Delinquency Measure

The dependent variable "subsequent delinquency" was measured with a scale that incorporates items pertaining to twelve various acts of delinquency collected at wave 3. The index was created by aggregating responses to questions regarding how often, in the past year, the respondent had: "run away overnight or longer," "taken something worth less than \$50," "taken something worth more than \$50," "joy-riding," "tried to buy stolen things," "damaged something not yours," "arson," "serious school fight," "group fight," "attacked to hurt someone," "robbery with or without weapons," and "forced sex." Each item had response categories that ranged from 1 to 4 with 1 indicating "never"

and 4 indicating "5 or more times." To prevent more frequent items from dominating the scale, each item was standardized prior to averaging. The resulting 12-item scale for *subsequent delinquency* has a Cronbach's alpha of .85.

Mediating Variables

Negative self concept was measured with ten items in which respondents were asked to indicate how much they agreed or disagreed with the following statements: "I have a positive attitude toward self," "I have a number of good qualities," "I do not have much to be proud of," "I am a person of equal worth to others," "I wish I could have more self-respect," "sometimes I think I am no good at all," "I am able to do things as well as most people," "I generally feel that I am a failure," "I am generally satisfied with myself," and "I certainly feel useless at times." The responses are coded using a Likert-type scale where "strongly disagree" is coded one and "strongly agree" is coded five. (Some items were reverse coded so that high values indicate negative self-concept). To prevent more frequent items from dominating the scale, the items were first converted into a z-score and then averaged to create a 10-item scale with a Cronbach's alpha of .78.

Although the current study uses the respondent's negative self-concept as a mediating variable, it is important to note that a more direct measure of a *deviant*—rather than negative self-concept would be more useful. However, a more direct measure of a deviant self-concept was not available with the current data. Nevertheless, this study examines the mediating effect of negative self-concept, which may be related to a deviant self-concept by the very nature of the stigmatization process that is expected to follow from experiences of the formal labeling process. Therefore, although a negative self-concept does not capture the extent to which one has a deviant self-concept in particular, it does capture an element of self-concept that is relevant to various interpretations of labeling theory (Kaplan, 1975; Ray & Downs, 1986).

Association with delinquent peers was used to measure an individual's links with a delinquent subculture. This variable was measured with 12 items in which respondents were asked to indicate whether or not their friends engaged in the following deviant acts: "sneak things without paying," "act loud or rowdy in public," "throw bottle rocks at people," "join in serious fights," "go joy riding," "take things w/o paying," "have sex," "belong to a gang," "sell hard drugs," "use alcohol," "use marijuana," and "use hard drugs." The items were coded so that greater values indicate greater levels of delinquency among peers. To prevent more frequent items from dominating the scale, all items were first converted into a z-score and then averaged to create a standardized index. This produced a 12-item scale with a strong Cronbach's alpha of .84.

The final mediating variable, *prosocial expectations* were measured with a scale that included responses to four items in which respondents were asked to indicate the priority they place on educational and occupational achievement. Subjects were asked to indicate whether "getting a good job" and "finishing school" are important. Respondents were also asked "how far in school would you want to go," and "how far in school will you go." Although these items cannot capture actual educational and occupational success that occurs at a future point for these individuals, they do capture the individual's perceived expectations in these areas. The items were coded in such a way that high values indicate higher perceived prosocial expectations for the future. The four items were first standardized and then averaged to produce a four-item scale with an acceptable Cronbach's alpha of .56.

Control Variables

The analysis includes control variables as four standard demographic variables: *socio economic standing (SES)*, *age*, *gender*, and *race/ethnicity*. These control variables have been included to protect against the possibility that the independent and dependent variables are correlated with one another only because they both are outcomes of the same background or demographic characteristics of the respondents. Gender was coded 1 for male and 0 for female. For race, dummy variables have been created for "Hispanic," "Black," and "Whites/Other" while age was measured continuously in years. The final demographic variable included is SES, which, as a proxy measure, contained four items in the caregiver questionnaire. These questions asked the caregiver to respond whether they "graduated from high school," "are currently employed," "currently receive food stamps," and "currently receive AFDC [Aid to Families with Dependent Children]." To prevent more frequent items from dominating the scale, each variable was first converted into a z-score and then averaged. This produced a four-item scale with a moderate Cronbach's alpha of .68. A control also was included to account for whether subjects received any CAR program services during the study period. The CAR data were collected as part of an evaluation of a delinquency prevention program that included treatment and control groups. Thus, in estimating the effects of labeling and the mediating variables, all models include a control for a dichotomous treatment variable (1 = treatment group, 0 = otherwise).

The final control variable employed involves the *child's prior deviance*. This wave 1 control is included to address concerns that any relationships are the result of preexisting differences in deviance. Similar to the dependent variable, this index was created by aggregating responses to 13 questions regarding how many times, in the past year, the subject had engaged in a variety of delinquent behaviors. Each item was coded 1 through 4, with 1 indicating never and 4 indicating 5 times or more. Like the preceding analysis, each

variable was first converted into a z-score prior to averaging. This produced a 13-item prior to deviance scale with a strong Cronbach's alpha of .79.

Results

In order to assess subsequent deviance, it was necessary to include only those individuals who completed all three waves of the study. Consequently, nearly 200 ($n=197$) individuals who failed to complete all three waves of the interviews were dropped from the analysis. In order to determine if these 197 dropped cases were systematically different from those who were retained, we assessed results from bivariate analyses using *t*-test. The results indicate that there were only trivial differences between those dropped and those retained. As compared to those retained, the only mildly consequential differences were individuals who were dropped from the sample who were likely to be male (55% dropped vs. 51% retained), white (7.5% vs. 7.8%), Hispanic (33% vs. 34%), African American (59% vs. 58%) and of a slightly lower SES (.6% vs. 1%). None of the dropped sample subjects, compared to the retained sample, approached statistical significance indicating inconsequential differences.

Table 1 Descriptive statistics

	Mean	SD	Min	Max
Self-reported deviance** $n = 596$	0	0.61	-0.37	3.91
Arrest $n = 662$.23	.42	0	1
Negative self-concept* $n = 596$	1.57	0.52	1	4
Delinquent peers* $n = 596$	0.32	0.29	0	1
Prosocial expectations* $n = 553$	3.5	0.45	1.8	4.6
Age $n = 677$	12.35	0.7	10	14
Male $n = 677$	0.51	0.5	0	1
African-American $n = 673$	0.58	0.49	0	1
Hispanic $n = 673$	0.34	0.48	0	1
SES	.02	.73	-.98	1.09
Treatment $n = 677$	0.4	0.5	0	1
Wave 1 deviance** $n = 661$	0	0.56	-0.32	3.98

Note. *indicates standardized index.

Table 2 Bivariate correlations for independent variables

	1	2	3	4	5	6	7	8	9	10	11	12
1 Deviance	—	.26*	.20*	.57*	-.20*	.08	.18*	-.16*	.08*	.10*	-.01	.40*
2 Arrest		—	.07	.20*	-.13*	.17*	.16*	.04	-.05	-.08*	.05	.21*
3 Negative concept			—	.19*	-.16*	.10*	-.04	-.25*	.21*	-.01	-.07	.11*
4 Delinquent peers				—	-.16*	.13*	.03	-.22*	.15*	.09*	-.12*	.35*
5 Prosocial expectations					—	-.07	.06	.09*	-.15*	.13*	.07	-.12*
6 Age						—	.06	-.16*	.12*	.02	-.02	.10*
7 Male							—	-.03	.06	.05	.01	.12*
8 Black								—	-.85*	-.10*	-.06	-.04
9 Hispanic									—	.01	.04	.03
10 SES										—	-.02	.03
11 Treatment											—	-.02
12 W1 deviance												—

Note. *indicates $p < .05$.

Table 3 OLS regression, effects of formal labeling on future criminal behavior

	Model 1 (<i>n</i> = 578)
Arrest	.19**
	.28 (.06)
Self concept	—
Delinquent peers	—
Prosocial expectations	—
African American	-.21**
	-.26 (.09)
Hispanic	-.10
	-.13 (.09)
Age	-.02
	-.01 (.03)
Male	.07**
	.06 (.04)
SES	.07*
	.06 (.03)
Prior deviance	.34**
	.37 (.04)
Treatment	-.03
	-.04 (.04)
Constant	.25 (.41)
<i>R</i> ²	.229
F-statistic	21.14**

Note. For each variable, the standardized coefficient is presented in the top row and the unstandardized coefficient and standard error (in parentheses) are presented in the bottom row.

**p* ≤ .05, two-tailed test.

***p* ≤ .01, two-tailed test.

Table 4 OLS regression, effects of formal labeling on hypothesized mediating variables

	Model 1 (negative self concept)	Model 2 (delinquent peers)	Model 3 (prosocial expectations)
Arrest	.05*	.17**	-.13**
	.06 (.05)	.10 (.02)	-.15 (.05)
African American	-.25**	-.24	-.07
	-.26 (.09)	-.12 (.04)	-.07 (.08)
Hispanic	.00	-.05	-.27**
	.00 (.09)	-.03 (.04)	-.27 (.09)
Age	-.06	-.04	-.04
	-.04 (.03)	-.02 (.01)	-.03 (.03)
Male	-.07**	-.05	.04
	-.07 (.04)	-.02 (.02)	.04 (.04)
SES	.05	.07	.06*
	.04 (.03)	.03 (.01)	.06 (.03)
Prior deviance	.09*	.30**	-.13**
	.09 (.04)	.14 (.02)	-.12 (.04)
Treatment	-.09**	-.14**	.06
	-.10 (.04)	-.07 (.02)	.06 (.04)
Constant	1.26 (.39)	.23 (.18)	.00 (.36)
R ²	.091	.206	.097
F-statistic	7.13**	18.48**	7.11**

Note. For each variable, the standardized coefficient is presented in the top row and the unstandardized coefficient and standard error (in parentheses) are presented in the bottom row.

* $p \leq .05$, two-tailed test.

** $p \leq .01$, two-tailed test.

Table 5 OLS regression, mediating effect of formal labeling on future delinquency

	Model 1 (n = 578)	Model 2 (n = 578)	Model 3 (n = 578)	Model 4 (n = 537)	Model 5 (n = 537)
Arrest	.19** .28 (.06)	.18** .27 (.05)	.12** .17 (.05)	.16** .22 (.06)	.09* .13 (.05)
Self concept	—	.15** .17 (.04)	—	—	.06 .07 (.04)
Delinquent peers	—	—	.46** 1.06 (.09)	—	.45** .99 (.08)
Prosocial expectations	—	—	—	-.16** -.19 (.05)	-.11** -.13 (.05)
African American	-.21** -.26 (.09)	-.18 -.21 (.09)	-.11 -.13 (.08)	-.26** -.29 (.09)	-.11* -.13* (.08)
Hispanic	-.10 -.13 (.09)	-.10 -.13 (.09)	-.08 -.10 (.09)	-.19* -.22 (.09)	-.13 -.16 (.08)
Age	-.02 -.01 (.03)	-.02 -.02 (.03)	-.03 -.03 (.03)	-.02 -.01 (.03)	-.04 -.03 (.03)
Male	.07** .06 (.04)	.11** .14 (.04)	.13** .15 (.04)	.11** .12 (.04)	.13** .15 (.04)
SES	.07* .06 (.03)	.08* .06 (.03)	.04 .03 (.03)	.10** .07 (.03)	.06* .05 (.03)
Prior deviance	.34** .37 (.04)	.32** .35 (.04)	.20** .22 (.04)	.27** .29 (.04)	.15** .16 (.04)
Treatment	-.03 -.04 (.04)	-.01 -.02 (.04)	.04 .04 (.04)	-.02 -.02 (.04)	.05 .05 (.04)
Constant	.25 (.41)	.03 (.46)	.00 (.36)	1.02 (.45)	.51 (.41)
R ²	.229	.250	.396	.218	.386
F-statistic	21.14**	21.05**	41.38**	16.33**	29.94**

Note. For each variable, the standardized coefficient is presented in the top row and the unstandardized coefficient and standard error (in parentheses) are presented in the bottom row.

* $p \leq .05$, two-tailed test.

** $p \leq .01$, two-tailed test.

Appendix A. variables and items

Variable/item	Response categories	Alpha
<i>Arrest (W2)</i>		
<i>How many times in the past two years have you been arrested?</i>	1 = yes, 0 = never	—
<i>Deviance (W3)</i>		
<i>How many times in the past year have you:</i>		
Run away overnight/longer	Never, 1–2 times, 3–4 times, 5 + times	.85
Something worth < \$50	Never, 1–2 times, 3–4 times, 5 + times	
Something worth > \$50	Never, 1–2 times, 3–4 times, 5 + times	
Joyriding	Never, 1–2 times, 3–4 times, 5 + times	
Tried to buy stolen things	Never, 1–2 times, 3–4 times, 5 + times	
Damaged something not yours	Never, 1–2 times, 3–4 times, 5 + times	
Arson	Never, 1–2 times, 3–4 times, 5 + times	
Serious school fight	Never, 1–2 times, 3–4 times, 5 + times	
Group fight	Never, 1–2 times, 3–4 times, 5 + times	
Attacked to hurt someone	Never, 1–2 times, 3–4 times, 5 + times	
Robbery w/ or w/o weapons	Never, 1–2 times, 3–4 times, 5 + times	
Forced sex	Never, 1–2 times, 3–4 times, 5 + times	
<i>SES (caregiver data)</i>		.68
Graduated from HS*	No, Yes	
Currently receive AFDC	Yes, No	
Currently employed*	No, Yes	
Currently receive food stamps	Yes, No	
<i>Negative self-concept</i>		.78
<i>How much do you agree or disagree with the following statements:</i>		
I take positive attitude toward self*		
I do not have much to be proud of	Disagree, somewhat disagree, somewhat agree, agree	
I have a number of good qualities*		
I am a person of equal worth to others*	<i>Greater values indicate a more negative self-concept</i>	
I wish I had more self-respect		
Sometimes I think I'm no good at all		
I generally feel I am a failure		
I am generally am satisfied with myself*		
I certainly feel useless at times		
I'm able to do things as well as most people*		
<i>Pro-social expectations</i>		.56
How far in school will you go		
How far in school do you want to go?	Grade 9–11, graduate HS, post HS education	

(Continued)

Appendix A. (Continued)

Variable/item	Response categories	Alpha
<i>How important are the following:</i>		
Getting a good job	Not important at all, not very important, somewhat important, very important	
Finishing school		
<i>Delinquent peers</i>		.84
<i>Do your friends:</i>		
Sneak things w/o paying*	No, Yes	
Act loud or rowdy in public*	No, Yes	
Throw bottle rocks at people*	No, Yes	
Join in serious fights*	No, Yes	
Go joy riding*	No, Yes	
Take things w/o paying*	No, Yes	
Have sex*	No, Yes	
Belong to a gang*	No, Yes	
Sell hard drugs*	No, Yes	
Use alcohol*	No, Yes	
Use marijuana*	No, Yes	
Use hard drugs*	No, Yes	
<i>Prior deviance (W1)</i>		
<i>How many times have you done the following:</i>		
Run away from home overnight/ longer	Never, 1–2 times, 3–4 times, 5 + times	.79
Taken something worth <\$50	Never, 1–2 times, 3–4 times, 5 + times	
Taken something worth >\$50	Never, 1–2 times, 3–4 times, 5 + times	
Taken a car	Never, 1–2 times, 3–4 times, 5 + times	
Set fire to somebody else’s property	Never, 1–2 times, 3–4 times, 5 + times	
Tried to buy/sell stolen things	Never, 1–2 times, 3–4 times, 5 + times	
Damaged somebody else’s property	Never, 1–2 times, 3–4 times, 5 + times	
Had a serious fight in school	Never, 1–2 times, 3–4 times, 5 + times	
Taken part in a group fight	Never, 1–2 times, 3–4 times, 5 + times	
Attacked someone	Never, 1–2 times, 3–4 times, 5 + times	
Made someone give you money/ thing	Never, 1–2 times, 3–4 times, 5 + times	
Forced someone to do sexual acts	Never, 1–2 times, 3–4 times, 5 + times	
Carried a weapon	Never, 1–2 times, 3–4 times, 5 + times	

Note. *indicates response categories have been reversed so all items are in the same direction. Additionally, greater values are descriptive of the variables name, so greater values of delinquent peers indicates more delinquent peers.