Continuing the Interactionist Tradition: Examining the Relationship Between Juvenile Delinquency, Formal Labeling, and Adult Criminal Behavior

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INTRODUCTION

The legacy of the Convict Criminology movement in the United States is closely tied to the work of two scholars: John Keith Irwin and Frank Tannenbaum. Irwin and Tannenbaum both championed a symbolic interactionist perspective (Carceral & Flaherty, 2022; Earle, 2016; Yeager, 2011, 2015; also see Irwin, 1987). For instance, in *Convict Criminology: Inside and Out*, Rod Earle notes that "At the heart of Tannenbaum's (1938) analysis of crime is the nature of social conflict, reaction, and social interaction" (Earle, 2016, p. 29). Likewise, Irwin (1987) explicitly stated that he found people, especially people with felony conviction records, to be "symbolic interacting human beings" (pp. 45-46). The "self" is of paramount importance to the interactionist perspective and Shadd Maruna, the current president of the American Society of Criminology, has stated "Convict Criminology is, of course, an ideal example of a Criminology of the Self" (p. xiii, as cited in Earle, 2016). As such, contemporary scholars with lived-carceral-experience carry on the interactionist tradition of Convict Criminology each time they produce theoretical and empirical scholarship on stigma, identity, and labeling theory.

Staying true to the legacy of Tannenbaum, Irwin, and the interactionist perspective, this paper seeks to provide answers to the questions: Who is formally labeled, and what are the effects of formal labeling on subsequent criminality? However, the current study breaks from the largely qualitative tradition of convict criminology by utilizing quantitative methods to examine interactionist labeling and the relationship between behavior and formal contact with the criminal justice system. An interactionist labeling model of juvenile delinquency that incorporates parental labeling, school labeling, and respondents' levels of self-control is presented. Structural Equation Modeling (SEM) is used to predict levels of juvenile delinquency, the application of formal labels, and adult criminality among a nationally representative sample of American adolescents: three waves of the National Longitudinal Study of Adolescent Health (2009).

THEORETICAL BACKGROUND

Tannenbaum's (1938) "dramatization of evil" describes the process by which offenders acquire deviant labels from members of society. If an act has been characterized as evil by society, then the offender will be simultaneously associated with the act and labeled as deviant. Thus, deviant labels are acquired from formal labeling experiences such as arrests, prosecutions, or convictions (Barrick, 2014). Paternoster and Iovanni (1989) hypothesized that there are mechanisms that intervene in the relationship between negative labeling and subsequent behavior. Formal labels may influence crime and delinquency due to their relationship with intervening non-criminal measures such as involvement with deviant peers (Becker, 1963; Bernburg et al., 2006), pro-social expectations (Restivo & Lanier, 2013), procedural justice (Slocum et al., 2016), perceptions of care (Kavish et al., 2016), structural impediments and blocked access to conventional opportunities (Bernburg & Krohn, 2003; Chiricos et al., 2007), delinquent identities (Becker, 1963; Paternoster & Iovanni, 1989), as well as redemption programs and rite of passage ceremonies (Maruna, 2001; 2011; Maruna et al., 2004; Rocque et al., 2016).

Following labeling theory, Chiricos and colleagues (2007) claimed that a formal labeling experience may lead to the transformation of an individual's identity and could increase subsequent involvement in crime. Additionally, they viewed the collateral consequences of felony convictions as "structural impediments". Structural impediments encountered after a formal labeling experience can have a dramatic impact on an individual's self-image and identity because those impediments continually and consistently reinforce negatively applied labels. In fact, Burton and colleagues (1986) described the collateral consequences of felony convictions as "persistent punishments" (p. 52) that follow individuals long after their sentences are completed. A person is reminded of their criminal past each time they are denied employment, housing, or the opportunity to vote. This constant reminder of their past reinforces the initial application of the negative formal label surely takes a toll on their concept of self.

It is also possible that other formal labels, such as an official arrest or prosecution, could have dramatic implications similar to the structural impediments related to criminal convictions that were outlined by Chiricos and colleagues (2007). Even though some individuals do not receive a formal

criminal conviction, the process of being arrested and prosecuted is likely to lead to the development of negative informal labels and a litany of other negative life-course outcomes (Chiricos et al., 2007; Pratt et al., 2016). As argued by Mead (1934), we see ourselves as others see us. If this is correct, then each time people are restricted by the collateral consequences of arrests and convictions, then they are reminded that others view them as criminal, deviant, or dangerous. In turn, this can reinforce deviant identities (see also Sherman, 2014). Simple tasks such as voting, finding housing, or filling out job applications become nerve-racking activities for labeled individuals.

Labeling theorists have primarily focused on formal labeling measured by criminal convictions and adjudications, but aggressive early intervention policies and police in schools may also be having negative impacts on the delinquency trajectories. Therefore, it is important to examine all types of labeling experiences. Conceptualizing formal labeling as an arrest is in line with other labeling research that treats arrests as formal labeling experiences (Huizinga & Henry, 2008; Kavish et al., 2016; Lopes et al., 2012; Restivo & Lanier, 2013; Slocum et al., 2016; Wiley & Esbensen, 2013).

Application of Labels

Labeling can occur when there is conflict between youth and their parents, peers, teachers, or formal social control agents. Labeling theory states that labels are differentially applied based on sources of social conflict such as gender, race, and class. Thus, labeling theory proposes that law is not uniformly imposed upon the public, and that formal agents of social control selectively apply labels. For instance, Becker (1963) suggested that economically disadvantaged individuals and people not racialized as white are more likely than others to have labels applied to them. In more general conflict terms, members of society with fewer resources are more susceptible to labeling, less able to defend themselves against the application of labels, and have less influence on the definition of social norms.

Chambliss' (1973) qualitative work established that it is possible that markers of socioeconomic status influence the likelihood of experiencing negative labeling events. Chambliss (1994) specifically argued that police organizations seek to maximize rewards and minimize strains, and that "…the powerless, the poor, and those who fit the public stereotype of "the criminal" are the human resources needed by law enforcement agencies to maximize rewards and minimize strains" (p. 192). Alternatively, others

have argued that members of more privileged groups with a greater stake in conformity are more subject to the power of a formal label in self-image construction (see Sherman et al., 1992). Addressing both points, and in line with a conflict tradition, contemporary labeling research proposes that the application of labels and the effect of those labels on individuals varies by socio-demographic characteristics (see Barrick, 2014).

In sum, labeling theorists assert that definitions of deviance and crime, and social responses, are created within specific social contexts. Literature suggests that socio-demographic characteristics, deviant peer associations, where police patrol, levels of racial profiling, status differences between individuals, and how much behavior deviates from social norms all may influence the application of a deviant label (Becker, 1963; Chambliss, 1973, 1994; Schur, 1971). This is why it is just as important to know who is labeled and how they were labeled, as it is to understand the impact of that label.

Labeling, Interaction and Self-Control

Low self-control is closely linked with one's concept of self (Brownfield & Thompson, 2008). Brownfield and Thompson (2005, 2008) began a line of research that examined the relationships between reflected appraisals, delinquent self-concepts, and delinquency. They examined whether control, labeling, and interactionist variables were correlates of a deviant self-concept and juvenile delinquency. They were specifically concerned about how a delinquent identity is actually created. Brownfield and Thompson (2008) found that measures of self-control are compatible with interactionist labeling approaches because measurements of self-control are closely linked to the self-concept.

While interactionists may disagree with Gottfredson and Hirschi's (1990) description of self-control as a stable personality trait, there is little to no debate of a properly constructed self-control measure's usefulness in predicting criminal or delinquent behavior. Braithwaite (1989) clearly viewed control and labeling perspectives as compatible for theoretical integration as both theories were incorporated into Braithwaite's (1989) theory of reintegrative shaming (p. 16). Likewise, Higgins and colleagues (2006) integrated concepts of self-control and social learning to explain digital piracy. Elements of Hirschi's (1969) social bonding theory have been routinely integrated with self-control theory (Doherty, 2006; Wright et al., 1999). Turanovic and Pratt (2013) integrated elements of strain and self-

control theory to explain the relationship between victimization, substance use, and criminal violence. Thus, it is apparent that many criminologists have sought to integrate Gottfredson and Hirschi's (1990) general theory of crime with other theoretical perspectives.

Self-control appears to be an important component of the interaction process and should be included in future examinations of interactionist labeling (Brownfield & Thompson, 2008). This study seeks to do just that, by incorporating a measure of self-control into the analysis. Though research on integrating self-control with the view of the self as dynamic is in its infancy, Pratt (2016) recently outlined how self-control and life-course theories could be theoretically integrated. Many of his points can easily be incorporated into interactionist labeling perspectives of delinquency and criminal behavior. One of his theoretical propositions was to view self-control as a selection variable of sorts. Thus, controlling for self-control in interactionist labeling models of delinquency and crime is just another way of avoiding selection bias as originally outlined by Smith and Paternoster (1990).

DATA AND METHODS

Sample

The sample used is derived from the National Longitudinal Study of Adolescent Health (2009).[1] Add Health is a nationally representative sample of adolescents in grades 7-12 from the United States starting in the 1994-95 school year. The current study utilizes waves 1, 2, and 3 of the Add Health data. Wave 2 data was collected in 1996 and wave 3 was collected in 2001. This means that respondents had reached adulthood at the third data collection point but were no older than the age of twenty-seven. For the purposes of this study, variables were constructed using each wave's in-home questionnaire and the wave 1 parent questionnaire. For a more detailed description of the collection procedures and data, see Harris and colleagues' (2009) full description of the Add Health data. The final sample used is limited to survey respondents who had valid statistical weights and observed pairwise-present data (n=8439).[2]

The primary advantages of this data set are that it is a large nationally representative sample, and it includes a wide variety of possible variables to be used in a criminological analysis. The panel design of the study further allows researchers to examine variables at different time points. One

disadvantage of the data is that it is not particularly concerned with labeling events, labeling dynamics, or labeling theory. This shortcoming prevents the current study from properly testing reflected appraisals as originally outlined by Matsueda (1992). However, the survey does provide enough valid measures of key concepts for a test of labeling theory.

Variables

Endogenous Variables

Delinquency/Criminal Behavior. Latent variables, incorporating both violent and non-violent delinquent acts, were constructed using confirmatory factor analysis (CFA) to be used as endogenous measures. Observed variables asked respondents how often, in the past 12 months, they deliberately damaged property that did not belong to them, stole something worth more than $50, stole something worth less than $50, went into a house or building to steal something, used or threatened to use a weapon to get something from someone, and sold marijuana or other drugs. In waves one and three, respondents were asked about their frequencies of engaging in the aforementioned behaviors. Response categories were "never" (0), "1 or 2 times" (1), "3 or 4 times" (2), and "5 or more times" (3). This CFA process is done once for wave one observed measures, and again for wave three observed measures. Therefore, latent variables are created for early manifestations of delinquency, and for subsequent criminal behavior that occurs long after potential labeling experiences.

Formal Labeling. Official formal labeling was measured by retroactively tracking self-reported arrests listed by respondents in wave 3. This was necessary because the questions concerned with formal labeling were not posed to respondents in the first two waves. Follow-up items were asked that inquired about date of the arrest. These follow-up items could then be compared with the dates that surveys were completed. Arrest dates were compared to survey dates to ensure that labeled individuals were labeled after the first wave of surveys and at least one year prior to the date they completed the surveys at wave 3. Thus, individuals were coded as being formally labeled if they indicated that they had been arrested after wave 1 but one year prior to the date that they completed the wave 3 survey. The final analytical variable used is a dichotomous variable with "yes" responses (yes=1) denoting that the

respondent was formally labeled by the criminal justice system. "No" (no=0) responses indicate that an individual was not formally labeled.

Exogenous Variables and Controls

Age. The age cohort of the respondent was expressed as the respondent's age in years at the time of the survey's first wave.

Non-White. Race was measured with a single dichotomous variable. The variable indicates whether the respondent identifies *primarily* as non-white (non-white=1; white=0).

Male. Biological sex was measured with a single dummy variable (male=1; female=0).

SES. The variables concerned with the education level of the respondent's residential parents served as a proxy for socioeconomic status (*SES*) in the current study.[3] The survey items were asked as part of the wave one parent questionnaire and were concerned with the highest degree completed by each of the respondents' residential parents. The items were collapsed into five distinct levels of educational attainment: (1) no high school diploma, (2) high school diploma or G.E.D., (3) Some college but no degree, (4) undergraduate college degree, (5) education beyond an undergraduate college degree. If only one residential parent was listed, then that parent's education level was used as the respondent's SES. If two parents were available, then their education levels were averaged. Higher scores represent higher levels of educational attainment (Range: 1-5).

Public Assistance. Public assistance was measured using a single survey item from the parent questionnaire at wave one. The respondent's parents were asked if they were recipients of public assistance. The variable used was a dichotomous variable with "yes" responses (yes=1) denoting that the respondent's parents answered that they were receiving public assistance or welfare. "No" (no=0) responses indicate that an individual's parents answered that they were not receiving public assistance or welfare.

Family Type. The role of the family in delinquency involvement has a rich history in delinquency research and debate (Gove & Crutchfield,

1982; Mack et al., 2007; Rankin, 1983; Tannenbaum, 1925). Therefore, it is important for this study to control for the role of different family types when examining the impact of formal labeling on subsequent delinquency. Respondents' family type was measured with a single dummy variable indicating the family type structure in which the respondent lives. Respondents were categorized based on whether they indicated that they lived in traditional two-parent households, or whether they were a part of some other family type at wave one.[4] This binary measure is coded as a "1" if respondents indicated that they live with two biological parents or two adoptive parents, and coded as a "0" if respondents indicated that they did not live in a traditional two-parent household.

School Labeling. Respondents' school labeling experiences were measured by using multiple survey items indicating stigmatizing school experiences and the grades that these experiences occurred. Respondents were asked whether they had ever been suspended or been expelled. These questions were followed up with items inquiring about the grade the respondent was in for their most recent suspension and expulsion. Consequently, the final analytical variable capturing school labeling is coded as "1" if any of the aforementioned survey responses were coded as a "1" and the experience happened at least one grade prior to the grade they were in at wave 1.

Parental Labeling. The parental labeling measure captures parental perceptions of their child's temperament and behavior. Each item is pulled from the wave 1 in-home parent questionnaire. The survey items used asked parents whether their child: has a bad temper; is doing well in life; is trustworthy; smokes regularly; and drinks regularly.[5] The item inquiring about how the child's life is going was originally measured on a scale of 1 (very well) to 4 (not well at all). Responses of "not so well" and "not well at all" were recoded as "1", with the remaining responses coded as "0". Similarly, the item inquiring about the child's trustworthiness asked parents how often their child was trustworthy and was originally measured on a scale 1 (always) to 5 (never). Responses of "never" and "seldom" were recoded as "1", with the other responses coded as "0". The remaining survey items were binary, and as such, were coded so that "Yes" responses (yes=1) denote that the respondent's parent believes that the child has a bad temper, smokes regularly, or drinks regularly. Likewise, "No" (no=0) responses indicate

that the parent does not believe that their child has a bad temper, smokes regularly, or drinks regularly. The study is chiefly concerned with whether a parental figure labels their child as deviant or not. Consequently, parental labeling is coded as "1" if any of the aforementioned survey responses were coded as a "1". The final analytical variable used indicates whether or not parents perceived their child as a "rule violator" or "distressed". The items used are also consistent with Matsueda's (1992) constructs of a perceived "rule violator" and "distressed" juvenile (Rocheleau & Chavez, 2015).

Low Self-Control. In the first wave, respondents were asked whether they had trouble getting along with their teachers, trouble paying attention, trouble keeping their mind focused, and trouble finishing their homework. A fifth question asked respondents to indicate whether they felt that they did everything just right. The responses to these items were summed together to form a low self-control scale (α= 0.6682). The scale was coded so that higher values represent lower levels of self-control (range: 1-20).

Perceptions of Care. Youth perceptions of care were measured by constructing three variables derived from wave two survey items. These survey items asked respondents how much they felt teachers, parents, and friends cared about them. Responses ranged from "not at all" to "very much". The variables were reverse coded (5= "not at all"; 1= "very much"). Thus, a higher score represents a more negative perception of how much respondents felt teachers, parents, and friends cared about them.

Plan of Analysis

Structural equation modeling (SEM) is the primary analytic strategy used for the current examination of juvenile delinquency, application of formal labels, and adult criminality. Individual measures of observed variables pertaining to different types of delinquent behavior serve as indicators of the underlying latent construct defined as "delinquency." Confirmatory factor analysis (CFA) process is done once for wave one observed delinquency measures, and again for wave three observed criminal behavior measures. Therefore, latent variables are created for early manifestations of delinquency, and for subsequent criminal behavior that occurs after potential labeling experiences. Both latent variables, along with the observed variable of formal labeling, will serve as endogenous variables. All other observed

variables included in the model will serve as exogenous variables. The results of the tests of mediation coupled with the overall model fit indices of the structural model are used to establish or reject statistical mediation effects. Furthermore, criminological theory and temporal ordering of variables allow the current study to tentatively confirm or reject the actual existence of mediation.

FINDINGS

Sample Characteristics

The sample's basic characteristics are presented in Table 1. The percentages displayed are weighted proportions. The mean age of the sample at wave 1 was approximately 15 years old. Roughly half of the sample was male (50.22%) and just over half of the respondents came from traditional two-parent family types (57.65%). The mean level of educational attainment by respondents' parents was a high school diploma but no college degree. The racial makeup of the sample closely mirrors national numbers reported in the 2010 census (Humes et al., 2011). A small weighted proportion of the sample was formally labeled (8.37%). Likewise, a similar proportion of the sample was suspended or expelled from school (8.35%). A higher proportion of respondents was informally labeled by parents (36.45%). Respondents, on average, reported more negative perceptions of care from teachers than from friends or parents. This finding is expected due to the social distance between respondents and parents or friends compared to the social distance between respondents and their teachers (Waller, 1932).

Assessing the Measurement Model

Figures 1 and 2 show the impact of the latent variables on their corresponding observed variables. CFA confirms that all of the indicators loaded high on the delinquency latent variables. The results show that the factor loadings on the first-order factors from observed wave 1 delinquency variables are significant and above 0.500, indicating that the observed measures adequately reflect the latent factor of delinquency ($\chi^2 = 74.84$, 7, $p < 0.000$; TLI = 0.98; CFI = 0.98; RMSEA = 0.030). Likewise, the factor loadings on the first-order factors from observed wave 3 criminal behavior variables are significant and above 0.500, indicating that the observed measures adequately reflect the latent factor of criminal behavior ($\chi^2 = 59.18$, 7, $p <$

0.000; TLI = 0.98; CFI = 0.98; RMSEA = 0.026). Therefore, delinquency and criminal behavior are single latent factors accurately representing their corresponding observed measures.

Assessing the Structural Model

As shown in table 2, the goodness-of-fit indices indicate that the structural model predicting wave 1 delinquency, formal labeling, and wave 3 criminal behavior provided an acceptable fit to the data ($\chi^2 = 190.01$, 52, $p < 0.000$; TLI = 0.95; CFI = 0.95; RMSEA = 0.017).[6] The TLI and CFI indices for the current study are right at the threshold (TLI = 0.952; CFI = 0.950) for an acceptable fit (Hu & Bentler, 1998). The current study's RMSEA measures are very close to their suggested cutoff of 0.01 for exceptional models.[7] As expected due to the size of the sample, the χ^2 test statistic is significant, but the other model fit indices point to an acceptable fitting structural model.

First, as depicted in *Figure 3*, the structural model predicted wave 1 delinquency using the observed wave 1 exogenous variables. Individuals that were labeled by parents, labeled by schools, had higher SES scores, had lower levels of self-control, men, and non-white respondents were all found to have significantly higher levels of delinquency involvement at wave 1. Likewise, those on public assistance and from traditional two parent households were found to have significantly lower levels of delinquency involvement at wave 1. The unstandardized estimates listed in table 2 are probit coefficients. The model R^2 for the latent juvenile delinquency factor is the variance explained for the continuous latent response variable (y*), rather than the observed ordinal dependent variable (y) (Bollen, 1989b).

Standardized results indicate that low self-control had the strongest effect on early delinquency involvement, followed by biological sex, parental labeling, race, SES, school labeling, family type, and public assistance. For one standard deviation increase in low self-control, wave 1 delinquency increased by 0.393 standard deviations. Men were found to be more delinquent than women by 0.194 standard deviations. Respondents labeled by their parents were found to be more delinquent at wave 1 than their non-labeled peers by 0.100 standard deviations. Non-whites were significantly more delinquent than others by 0.085 standard deviations.

For each standard deviation increase in SES, wave 1 delinquency increased by 0.074 standard deviations. Those labeled by school officials were 0.068 standard deviations more delinquent at wave 1 than their

non-labeled peers. Respondents from traditional two-parent households were less delinquent at wave 1 than those not from traditional two-parent households by 0.051 standard deviations. Finally, individuals that received public assistance were less delinquent at wave 1 than those not receiving public assistance by 0.047 standard deviations. The model accounts for about 25% of the variance in juvenile delinquency.

Next, as depicted in *Figure 4*, the structural model predicted formal labeling using the observed wave 1 exogenous variables and wave 1 delinquency. Older respondents, men, individuals labeled delinquent or distressed by their parents, and those with higher levels of early delinquency involvement were all significantly more likely than others to be formally labeled. Respondents from households with two biological parents were significantly less likely than others to be formally labeled. Sex was the strongest predictor of formal labeling, followed in turn by early delinquency involvement, age, parental labeling, and family type. While low self-control was strongly and significantly predictive of early delinquency, it had no significant impact on formal labeling. Likewise, school labeling, race, public assistance, and SES were found to have no significant influence on societal reaction to delinquency involvement through formal labeling processes. The model accounts for about 20% of the variance in formal labeling.

Finally, as depicted in *Figure 5*, the structural model predicted subsequent criminal behavior at wave 3 using the observed exogenous variables from waves 1 and 2, and the endogenous variables wave 1 delinquency and formal labeling. Seven variables were predictive of future criminal behavior. Older individuals were significantly less involved in criminal behavior at wave 3. This is to be expected as respondents begin to "age out" of criminal behavior as they reach adulthood. Formal labeling, prior delinquency at wave 1, sex, SES, and negative perceptions of care from teachers were all found to significantly increase wave 3 criminal involvement. Conversely, parental labeling was found to significantly decrease wave 3 involvement in criminal behavior. School labeling, low self-control, public assistance, race, family type, along with negative perceptions of care from parents and friends were all found to be insignificant in the prediction of wave 3 criminal behavior.

Standardized estimates indicate that formal labeling was the strongest predictor of wave 3 involvement in criminal behavior. One standard deviation increase in formal labeling increased wave 3 criminal behavior by 0.323 standard deviations. Prior delinquency involvement was the second most

predictive measure of wave 3 criminal behavior. One standard deviation increase in wave 1 delinquency increased wave 3 criminal behavior by 0.291 standard deviations. Age was the third most predictive measure of wave 3 criminal behavior. One standard deviation increase in age decreased wave 3 criminal behavior by 0.176 standard deviations. Following age, sex was the next variable most predictive of future criminal behavior as men were significantly more involved in criminalized behavior than women at wave 3. Men were 0.166 standard deviations more criminally involved than women. Following sex, SES was the next measure most predictive of wave 3 criminal behavior. For each standard deviation increase in SES, wave 3 criminal behavior increased by 0.131 standard deviations. For each standard deviation increase of negative perceptions of care from teachers, an important interactionist labeling variable, wave 3 criminal behavior increased by 0.092 standard deviations. Finally, parental labeling was predictive of future criminal behavior, but not in the expected direction. Respondents labeled as delinquent or distressed by their parents at wave 1 were significantly less criminally involved than unlabeled respondents by 0.042 standard deviations. The structural model accounts for about 40% of the variance in wave 3 criminal behavior.

Assessing Mediation

One final aspect of the current study was to examine whether formal labeling mediates the relationship between prior delinquency and subsequent delinquency. Likewise, the study sought to investigate whether formal labeling mediated the relationship between low self-control and future criminal behavior. As aforementioned, the results clearly indicate that wave 1 delinquency is predictive of formal labeling and subsequent criminal behavior measured at wave 3. Likewise, formal labeling is significantly and directly associated with future criminal behavior. In fact, standardized estimates indicate that formal labeling is the most predictive measure of subsequent criminal behavior in this model. That being said, the findings also indicate that formal labeling exerts a mediating influence between prior delinquency and subsequent criminal involvement. To be clear, formal labeling mediated the effect of prior delinquency on subsequent criminal behavior by 0.081 standard deviations.

The causal steps approach was the primary method used to statistically establish the existence of a mediation effect between prior delinquency

and criminal behavior. To ease the interpretation of findings, the results of the coefficients relevant to these steps are presented in Table 3. According to the causal steps approach (Baron & Kenny, 1986; see also MacKinnon et al., 2007), these results tentatively indicate that formal labels mediate the relationship between prior delinquency and subsequent delinquency. The same causal steps approach was repeated to examine the relationship between low self-control, formal labeling, and future criminal behavior. The lack of significant results for the first two causal steps indicates that there is no relationship between low self-control and future criminal behavior for formal labeling to mediate.

Multiple additional steps beyond Baron and Kenny's (1986) causal steps approach were undertaken to further justify the statistical mediating effect of formal labeling between prior delinquency and subsequent criminal behavior. First, a joint test of significance was conducted using the statistical program "*R*" because MacKinnon and colleagues (2002) found it to be the best test of mediation hypotheses. Furthermore, the product of coefficients approach was used by conducting four variations of the Sobel test: the Delta method (Muthen & Muthen, 1998-2010), the Sobel (1982) first-order solution, the Aroian (1944) second-order exact solution, and the Goodman (1960) unbiased solution (see also MacKinnon et al., 2002). All five of the aforementioned statistical tests indicated that formal labeling was a statistically significant intervening variable between prior delinquency and future criminal behavior. The results of the causal steps approach, the aforementioned tests of significance, and the overall model fit indices of the structural model provide strong support for the hypothesis that formal labeling statistically mediates the relationship between prior delinquency and future criminal behavior.

DISCUSSION

Formal Labeling

Formal labeling significantly increased subsequent criminal behavior. Not only did formal labeling have the strongest significant relationship with subsequent criminal behavior, but it also partially mediated the influence of prior delinquency on future involvement in criminal behavior. This is a strong indication that formal labeling has a significant and substantial impact on subsequent criminality, and that

this relationship is not just an artifact of prior delinquent behavior. The findings provide confirmation of the deviance amplification hypothesis, and the mediation effect provides further support for the notion that sanctions and labeling experiences influence future involvement with crime independent of prior behavior.

Some formally labeled individuals do not subsequently become more involved in criminal behavior (Morris & Piquero, 2013). This can likely be explained by the mechanisms labeling theorists assert intervene in the relationship between formal labels and subsequent criminalized behavior (Becker, 1963; Barrick, 2014). Individuals may be formally labeled, but deviance amplification should not be expected if the label does not result in increased deviant peer associations, employment and education failures, or changes to identities. For instance, individuals may be formally labeled, but may not increase their involvement in crime if criminal identities are unimportant to them (Chassin et al., 1981), they do not seek out deviant peers, or they are able to achieve employment or educational success.

The mechanisms that labeling scholars claim intervene in the relationship between formal labeling and subsequent behavior are important because prior research suggests that there are strong associations between them and involvement in crime and delinquency. Association with deviant peers and peer reflected appraisals as delinquent are consistently related to increased delinquency involvement (Adams, 1996; Haynie, 2001; 2002; Haynie & Osgood, 2005; Heimer & Matsueda, 1994). More specifically, and most relevant to the current findings, Adams (1996) found that the effects of labeling were mediated by associations with deviant peers. Formal labeling has been found to be significantly related to education failures (Sweeten, 2006). This is troubling because prior research also shows a strong relationship between educational attainment and reduced recidivism (Chappell, 2004; Dennison, 2019; Gordon & Weldon, 2003; MacKenzie & Hickman, 1998; Mercer, 2009). Likewise, employment has been found to be associated with reduced recidivism (Berg & Huebner, 2011; MacKenzie & Hickman, 1998; Skardhamar & Telle, 2012; Visher et al., 2008; Yahner & Visher, 2008), especially for older individuals (Uggen, 2000). Together, these studies indicate that peer associations, education, and employment are all important predictors of desistance and reintegration success after labeling experiences.

Identity and Low Self-Control

A key aspect of this study was the inclusion of low self-control in the structural model. It is interesting to note that low self-control did not have a significant impact on formal labeling or subsequent criminal involvement. The former finding is in stark contrast to the findings of Beaver and his colleagues (2009) and Longshore and Turner (1998), which both found that self-control was linked to arrest experiences. However, low self-control was the strongest predictor of delinquency involvement. These findings indicate that while low self-control is a theoretically important variable in predicting initial involvement in delinquency, it is much less important in the prediction of formal labeling and adult criminal behavior. This reinforces that formal labeling is a selective social reaction not based on stable personality traits. It also suggests that formal labeling is much more important in predicting secondary deviance than low self-control.

Low self-control is likely influencing early delinquency, which in turn, impacts dynamic self-concepts. Conceptually, self-control is likely a correlate of identity. In other words, personality traits such as impulsivity and risk-taking influence others' perceptions of individuals, which in turn, influence identity measures like reflected appraisals and self-appraisals. These delinquent identities may then influence subsequent criminality. Therefore, as prior scholars have already found (Brownfield & Thompson, 2008), formal contact with police in the form of an arrest likely has a greater impact on delinquent identities than low self-control. Similarly, delinquent identities likely have a greater influence on the development of criminal behavior than self-control. Brownfield and Thompson's (2008) research indicates that low-self-control plays an important role in the development of delinquent identities, but official arrests were more predictive of delinquent identities and the current study further revealed formal labeling to be the most influential variable for predicting future criminal behavior. Taken together, the current study and the work of Brownfield and Thompson (2008) suggests that low self-control is merely one dimension of a dynamic interactionist relationship between juvenile delinquency, self-concepts, and subsequent criminality (also see Brownfield & Thompson, 2005).

In sum, formal labeling's influence on subsequent criminal behavior was stronger than the influence of prior delinquency or any other variable in the analyses. Furthermore, what influence prior delinquency did have on future criminal behavior was partly mediated by formal labeling.

This study contends that this mediation effect is likely the product of important unmeasured intervening variables such as blocked opportunities, associations with deviant peers, and identity changes. Future research should seek to use longitudinal data collected at many different time points, and include measures of these potential intervening mechanisms, to further investigate and disentangle the relationship between formal labels, non-criminal outcomes, and subsequent involvement in criminalized behavior.

Stakes in Conformity

The findings pertaining to negative perceptions of care from teachers suggest that teachers may play an important role in the development of criminal behavior. In line with prior research (Kavish et al., 2016), respondents with more negative perceptions of care from teachers were more involved in criminal behavior as young adults. This finding appears to add weight to the notion that stakes in conformity play a role in the labeling process (see Barrick, 2014; also see Sherman et al., 1992). In other words, it may be that how much one believes their teacher cares about them could influence how much impact an official formal label will have on subsequent behavior. If adolescents perceive their teachers to not care about them, an unsaid negative informal label, then that weakens the bond between youth and the institution of education. Thereby, making them more prone to the effects of formal labels. Conversely, if individuals perceive their teachers to care for them, an unsaid positive informal label, then this may reduce the influence of formal labeling on future outcomes.[8] Essentially, it is possible that positive perceptions of care from teachers could serve as a protective factor from the deviance amplifying effects of formal labels. While this is not a direct test of positive labeling, it does lend support to the notion that positive labels may have a positive relationship with desistance from crime.

Positive labels can come in many forms. For the purposes of encouraging desistance from criminal or delinquent behavior though, pro-social (as opposed to antisocial) labels may serve to replace stigmatizing labels of "delinquent" or "felon" (Maruna et al., 2004). Arrests, official adjudications, and convictions serve as degradation ceremonies that apply formal negative labels (Garfinkel, 1956; also see Maruna et al., 2004). Therefore, an official ceremony or process that applies pro-social labels may be necessary to replace such negative labels, and in turn, encourage desistance. In fact, Maruna and colleagues (2004) noted that until individuals see that others view them as

"success stories" (p.277), they are not likely to view themselves as such. Similarly, they pointed out how it is well established that individuals that have desisted tend to rely on people of "good moral standing" (p. 275) to vouch for their character (also see Maruna, 2001). You can see the value and importance of "personal vouchers" on desistance in Convict Criminology's emphasis on mutual support, mentorship, and desistance narratives (Catoe, 2021; Maruna & Liem, 2021; Tietjen & Kavish, 2020).

LIMITATIONS

This paper is not without its methodological limitations. The sample and data used only allow the findings to be generalized to adolescents attending school in the United States. Since truancy is a status offense that could evoke informal and formal social responses, this study is unable to generalize its findings to a small but important segment of the nation's adolescent population. Additionally, the data itself was not particularly concerned with labeling events or processes. It is strongly suggested that future surveys strive to include the items needed for a proper test of labeling theory. In fact, for the purposes of improving criminological research, social surveys of adolescents should begin including items considered to be the most pertinent among all types of criminology. This would allow research of all types to improve and would simultaneously foster a new wave of theoretical elaboration and integration.

Another limitation of the current study is that only one formal label was examined. This paper operationalized formal labeling as a self-reported arrest. An arrest, arguably, is a weak measure of formal labeling because there are fewer "structural impediments" after being arrested than after being officially adjudicated and sanctioned.[9] That being said, contemporary research has found that even being stopped and detained by police, rather than being arrested, can have deviance amplifying effects (Slocum et al., 2016; Wiley & Esbensen, 2013; Wiley et al., 2013). Thus, research seems to indicate that any type of contact with law enforcement or the criminal justice system can have deviance amplifying effects.

Existing criminological and criminal justice research shows that there are other noteworthy formal labels that could influence criminalized behavior and future criminal justice outcomes. For example, Quinn (2010) examined the relationship between a formal "gang member" label and juvenile justice

dispositions. Still yet, other studies have operationalized formal labeling as an official conviction (Chiricos et al., 2007). To compound this limitation, all labels do not impact or influence an individual's life equally. Becker (1963) made this clear when he described the idea of a "master status." Not all labels are negative and specific labels can hold more or less weight for certain individuals.[10] Future research should make a greater attempt to elaborate conceptually on Becker's (1963) notion of a "master status" and to better explain how different types of labels specifically affect different types of people.

Similarly, this study did not account for the influence of positive labels on delinquency or formal labeling. Thompson (2014) suggested that labeling theory could be extended to explain how labels could function positively. Becker (1963) stated that labels motivate our behavior, and the bulk of labeling research has focused on how negative labels motivate criminalized behavior. That being said, Thompson (2014) clearly demonstrated that a positive label could motivate a positive change in behavior. Future research should consider discussing how positive labeling, whether formal or informal, could possibly motivate desistance from crime and delinquency.

Another limitation of this study was that temporal precedence was not established for the prediction of early juvenile delinquency. The current study was unable to distinguish the exact relationship between parental labeling and juvenile delinquency. Parental labeling was significantly linked to juvenile delinquency, but the direction of this relationship cannot be definitively established by this research. However, temporal precedence was established for the prediction of criminal behavior, so this limitation had no impact on the study's focal analysis of deviance amplification. Overall, it is hoped that any deficiencies and limitations found in this analysis of labeling theory might be remedied by future criminological research by using even more statistically sound techniques of analysis, different datasets, or other innovative research strategies.

CONCLUSION

This paper presented an interactionist labeling model that incorporates respondents' levels of self-control to explain juvenile delinquency, formal labeling, and criminal behavior among a nationally representative sample of American adolescents. This contributes to existing criminological research

by providing a contemporary test of labeling theory using a nationally-representative and longitudinal data set, and by continuing a new and innovative conceptual approach towards labels and criminalized behavior (see Kavish et al., 2016). This study was multivariate, controlled for prior delinquent behavior and low self-control, included variables for respondent's perceptions of care, examined a large nationally representative sample, and had an extensive follow-up period between wave 1 and wave 3. According to Barrick (2014), these attributes qualify it as one of the more methodologically rigorous tests of labeling theory. Future research should seek to follow Barrick's (2014) guidelines and suggestions for the most theoretically informed labeling theory studies because her research found that the most methodologically rigorous tests of labeling theory happened to also be the tests most likely to be supportive of labeling theory. This means that tests of labeling theory should use multivariate statistical techniques, include intervening mechanisms such as delinquent peers, employment and educational success, and identity changes, investigate potential contingencies and stakes in conformity, as well as control for important confounding variables such as prior delinquency and low self-control. Doing so will allow future research to better decipher when and how sanctions will lead to desistance or deviance amplification.

The findings of this study provide the context for a couple policy implications. Only a small portion of arrested juveniles are dealt with in an informal manner such as restorative justice programs, family counseling programs, or a transfer to some other social welfare agency (Puzzanchera, 2014). More programs and policies could be implemented to allow local jurisdictions to process juveniles and young adults informally, instead of arresting them. Processing people informally allows for the avoidance of further labeling, stigmatization, and more specifically in the case of older adolescents and young adults, the collateral consequences of official convictions. Though these programs could trigger further negative labeling, the label would be less formal than further official processing, less severe than official adjudications, and could be spearheaded by local community organizations. Furthermore, these programs could also provide opportunities for redemption, forgiveness, mentorship, and possibly an opportunity to de-label arrested individuals.

The findings of this study can also be viewed as supportive of marijuana decriminalization policies. In some instances, laws actually allow for police officers to more freely exercise their discretionary arrest powers.

For instance, in Illinois, a city ordinance allowed Springfield police officers to treat possession of marijuana as a simple ordinance violation rather than arresting an individual according to state law (Rushton, 2012). Then Springfield alderman, Gail Simpson, proposed the city ordinance as a way of helping teenagers avoid "a lasting stigma" of a drug arrest or conviction (Olsen, 2015). The findings of this study lend credence to the alderman's idea that decriminalizing such drug arrests helps individuals avoid stigma and future involvement in the criminal justice system.

The criminal stigma associated with being formally labeled has been found to impact nearly every facet of a person's life and contributes to a cycle of captivity within society (Gundur & Kavish, 2022). As such, policy initiatives should limit the proliferation of formal labels, provide access to de-labeling opportunities, and address the intervening mechanisms that interactionists claim reinforce deviant identities and contribute to deviance amplification. For instance, policies and programs could be put in place that reduce prison and jail populations, end the "war on drugs", demilitarize police, increase the use of deferred adjudication in sentencing, restore voting rights for people with felony convictions, reduce the scope and number of collateral consequences associated with arrests and felony convictions, restore access and funding for higher education in all prisons, increase employment opportunities, reduce housing discrimination, and greatly expand reentry programs such as Project Rebound and other community-centered resources (Chowdhury & Butler, 2019; Richards et al., 2012; Wilson, 2019).

Petrich and colleagues (Petrich et al., 2021) asserted that skeptics have long claimed that sanctions, especially custodial sanctions, may have an amplifying effect of subsequent criminalized behavior. Their meta-analysis concluded, quite simply, that "The skeptics were right" (Petrich et al., 2021, p. 51). To that point, I'd point out that proponents of Convict Criminology have been some of the biggest skeptics of deterrence theory and any idea that crime can be reduced through the increased use or harshness of punishment. The legacy of Convict Criminology is one of staunch resistance to any notion that punishment, deprivation, or dehumanization could possibly lead to crime reductions (Ross & Richards, 2003; Ross & Vianello, 2020; Tannenbaum, 1922; Tietjen, 2019).

In sum, this study's findings are in line with a wide body of evidence suggesting that the stigmatizing impact of criminal justice sanctions can

have an amplifying effect on subsequent criminalized behavior (Kavish et al., 2016; Petrich, et al., 2021; Pratt et al., 2020; Slocum et al., 2016; Wiley et al., 2013). It followed the tradition of one of the original skeptics, Frank Tannenbaum, and used an interactionist labeling model to explain juvenile delinquency, the application of deviant labels, and adult criminal behavior. The findings indicated that while low self-control was the strongest significant predictor of early delinquency involvement, formal labeling was the strongest significant predictor of future criminal behavior and partially mediated the influence of prior delinquency on subsequent behavior.

ENDNOTES

[1] This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due to Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (see http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis.

[2] This strategy preserves the overall integrity and maintains the nationally representative nature of the data. This strategy is optimal because deleted non-weighted cases were selected outside of the framework used for the core Add Health sample. The majority of the deleted cases had missing data for the three variables derived from the parent questionnaire. All other variables ranged from no missing responses to only 3% missing. Additionally, as a sensitivity test, missing values were replaced and the same models presented below were duplicated. The imputed models resulted in no significant differences in outcomes.

[3] Using the income of the respondents' residential parents as a proxy for SES was initially considered for the study. However, the data collectors and other scholars found the income measures to be highly unreliable. To be more specific, there is a substantial amount of missing data pertaining to parental income. Recent studies have concluded that these missing data may not be random, but rather, represent a distinct subset of the study's population (see Harris et al., 2009).

[4] Kressierer and Bryant (1996) stated that adoptive relationships might be stigmatizing due to the social expectation that parents would prefer having biological children. Because of this, this study considered treating adoptive parents differently than biological parents. However, the final variable was operationalized to reflect families with two biological parents or two adoptive parents. There are two reasons for this operationalization. Firstly, there were only a small number of children with two adoptive parents (n=141). Secondly, as a sensitivity analysis, respondents that did

have two adoptive parents were coded as not having two biological parents. There were no significant differences in findings between the two coding options, which suggests there is no difference between having two biological parents and two adoptive parents.

5 The survey items used for the parental labeling variable were measured at the same time as delinquency measures (wave 1), but these same survey items have been previously operationalized as measures of self-control (Beaver et al., 2009). Therefore, it is assumed that these labels were applied at an early age. Measuring self-control using parental appraisals is relatively commonplace in self-control research (Beaver et al., 2009; Wright et al., 1999; see also Duckworth & Kern, 2011), but because the items used to construct this variable are parental appraisals, the items used are also consistent with Matsueda's (1992) constructs of a perceived "rule violator" and "distressed" juvenile (Rocheleau & Chavez, 2015).

6 The χ^2 value and degrees of freedom are corrected for using the WLSMV estimator. Only the p-value should be interpreted for model fit (Muthen and Muthen, 1998-2010). The χ^2 test statistic is significant for the measurement and structural models suggesting a poor model fit, but Schermelleh-Engel and colleagues (2003) cautioned scholars from putting too much emphasis on the χ^2 test because of its known dependence on sample size. This test statistic is dependent on sample size because the χ^2 value increases with sample size while the degrees of freedom remains constant. Essentially, sample sizes above 400 tend to always be statistically significant (Kenny, 2015). While the problem of sample size dependence cannot be eliminated, Jöreskog and Sörbom (1993) suggested that researchers compare the ratio between the χ^2 value and degrees of freedom to better gauge model fit (χ^2/df). This ratio should be as low as possible, but there is no agreed upon standard for gauging a model's fit using this technique. However, a ratio of about three is generally considered an acceptable fit (Kenny, 2015).

7 Three other goodness-of-fit indices based on the χ^2 statistic and degrees of freedom were used in conjunction with the χ^2 test statistic to assess the overall fit of the structural and measurement models: the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error approximation (RMSEA). These alternative indices are necessary because researchers, such as Bollen (1989a), have noted that one fit measure alone does not determine whether a model is valid. Hu and Bentler (1998) concluded that TLI and CFI indices that have scores close to or higher than 0.95 are indicative of a reasonably good fit between theorized models and observed data. MacCallum and colleagues (1996) suggested that a RMSEA fit measure of 0.01 is an exceptional model fit score, and a measure of 0.05 represents a good fit.

8 An interaction term and tests for mediation were considered to examine the relationship with future criminal behavior between perceptions of care from teachers and formal labeling. However, temporal precedence could not be established and the temporal ordering of variables was not possible due to the unique way in which formal labeling was measured. In essence, there was no way to distinguish whether negative perceptions of care came before, simultaneously, or after formal labels.

9 Formal convictions and adjudications were considered for use as formal labels in this study, but there were too few respondents with these outcomes to construct a

reliable measure of formal labeling. Essentially, arrest was used because this was the best formal label available in the dataset.

[10] Status is typically distinguished by one important trait that dictates who belongs and who does not belong. Similar to skin color, the label of "deviant" is a master status. A master status is one that transcends other auxiliary status traits. Becker (1963) argued that a deviant status transcends other status traits. Through stereotyping, auxiliary status traits are often "informally expected" (Becker, 1963, p. 32) to accompany a master status. Thus, those labeled as deviant are expected to not respect or value laws and be likely to engage in behavior that may have preceded the initial application of a deviant label (Becker, 1963; see also Schur, 1971). Becker (1963) argued that these generalizations and social expectations result in self-fulfilling prophecies for labeled individuals, and they ignore that individuals may value other statuses and roles that conflict with a socially applied label.

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APPENDIX

Table 1: Descriptive Statistics

		(n = 10,828)		
	Variables	Range	Mean	Standard Error[2]
1	MALE	0-1	0.502	0.006
2	AGE (W1)	11-21	15.077	0.113
	RACE			
3	NON-WHITE	0-1	0.344	0.028
	FAMILY TYPE			
4	TRADITIONAL TWO-PARENT	0-1	0.577	0.013
5	SES	1-5	2.698	0.052
6	PUBLIC ASSISTANCE	0-1	0.096	0.009
	PERCEPTIONS OF CARE (W2)			
7	TEACHER	1-5	2.462	0.024
8	PARENT	1-5	1.236	0.012
9	FRIEND	1-5	1.689	0.016
10	LOW SELF-CONTROL	1-20	6.394	0.066
11	PARENTAL LABELING	0-1	0.365	0.010
12	SCHOOL LABELING	0-1	0.084	0.007
13	FORMAL LABELING	0-1	0.084	0.005
	DELINQUENCY (W1)			
14	PROPERTY DAMAGE	0-3	0.247	0.010
15	STEAL 50 OR MORE	0-3	0.069	0.005
16	BURGLARY	0-3	0.070	0.005
17	ROBBERY	0-3	0.056	0.005
18	SELL DRUGS	0-3	0.131	0.010
19	STEAL 50 OR LESS	0-3	0.328	0.014
	CRIMINAL BEHAVIOR (W3)			
20	PROPERTY DAMAGE	0-3	0.120	0.006
21	STEAL 50 OR MORE	0-3	0.049	0.004
22	BURGLARY	0-3	0.027	0.003
23	ROBBERY	0-3	0.026	0.003
24	SELL DRUGS	0-3	0.187	0.011
25	STEAL 50 OR LESS	0-3	0.118	0.009

[1] Weighted means are reported
[2] Standard errors adjusted for survey design features of Add Health

Table 2: Structural Model Predicting Juvenile Delinquency, Formal Labeling, and Criminal Behavior

	Delinquency (Wave 1)			Formal Labeling			Criminal Behavior (Wave 3)			Criminal Behavior (Wave 3)		
Variables	*b*	*SE*	*B*	*b*	*SE*	*B*	*b*	*SE*	*B*	*b*	*SE*	*B*
Formal Label (W1)	-	-	-	-	-	-	-	-	-	0.246 ***	0.032	0.323
Delinquncy (W1)	-	-	-	0.333 ***	0.055	0.251	0.378 ***	0.037	0.372	0.294 ***	0.040	0.291
Parental Label	0.171 ***	0.037	0.100	0.143 *	0.057	0.063	-0.038	0.036	-0.022	-0.073 *	0.035	-0.042
School Laberl	0.224 **	0.080	0.068	-0.039	0.099	-0.009	0.009	0.067	0.003	0.019	0.064	0.006
Low Self-Control	0.102 ***	0.005	0.393	0.003	0.012	0.007	-0.006	0.007	-0.023	-0.007	0.007	-0.026
Male	0.318 ***	0.037	0.194	0.636 ***	0.070	0.293	0.433 ***	0.043	0.260	0.274 ***	0.047	0.166
Age	-0.018	0.012	-0.035	-0.048 *	0.019	-0.070	-0.105 ***	0.012	-0.199	-0.092 ***	0.013	-0.176
SES	0.055 ***	0.016	0.074	0.017	0.028	0.017	0.105 ***	0.018	0.100	0.100 ***	0.017	0.131
Public Assistance	-0.135 *	0.058	-0.047	-0.020	0.092	-0.005	0.014	0.076	0.020	0.020	0.071	0.007
Family Type	-0.085 **	0.033	-0.051	-0.105 *	0.050	-0.048	0.046	0.045	0.071	0.071	0.045	0.042
Race - Non-White	0.149 ***	0.043	0.085	-0.056	0.061	-0.024	-0.020	-0.020	-0.006	-0.011	0.042	-0.004
Negative Perceptions of Care (W2)												
Teacher	- -	-	-	- -	-	-	0.075 ***	0.018	0.091	0.075 ***	0.018	0.092
Parent	- -	-	-	- -	-	-	0.016	0.037	0.011	0.016	0.036	0.011
Friend	- -	-	-	- -	-	-	-0.017	0.028	-0.016	-0.017	0.028	-0.016
Formal Labeling - Indirect[a]							-	-	-	0.082 ***	0.015	0.081
R^2		0.251			0.201			0.314			0.403	

X^2 (*p*-value)	182.441 (0.000)
df	52[b]
TLI	0.952
CFI	0.950
RMSEA	0.017

Note. All estimates corrected and standard errors adjusted for survey design features of AddHealth (^{N} = 8,439)

[a] This is the indirect effect of formal labeling from wave 1 delinquency to wave 3 delinquency

[b] The x2 value and degrees of freedom are corrected for using the WSLMV estimator. Only the *P*-value should be interpreted for model fit (Muthen & Muthen. 1998-2010)

* p ≤ .05 ** p ≤ .01 *** p ≤ .001

Table 3: Causal Steps Approach to Mediation

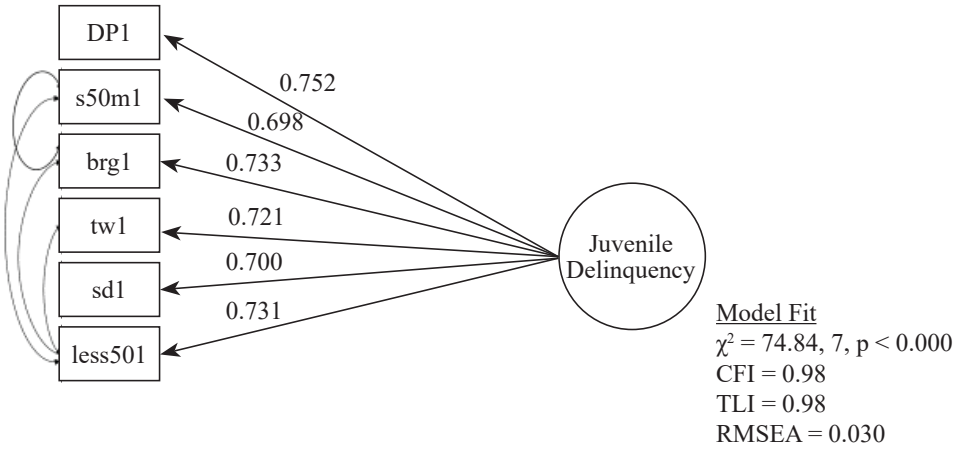
Variables	*b*	*SE*	*B*
Juvenile Delinquency (X --> Y)	0.378 ***	0.037	0.372
Juvenile Delinquency (X --> M)	0.333 ***	0.055	0.251
Juvenile Delinquency (X --> Y, Controlling for M)	0.294 ***	0.040	0.291
Low Self-Control (X --> Y)	-0.006	0.007	-0.023
Low Self-Control (X --> M)	0.003	0.012	0.007
Low Self-Control (X --> Y, Controlling for M)	-0.007	0.007	-0.026

Note. All estimates corrected and standard errors adjusted for survey design features of the Add Health.

X= Independent Variable (Juvenile Delinquency or Low Self-Control), M= Mediating Variable (Formal Labeling), Y=Dependent Variable (Criminal Behavior).

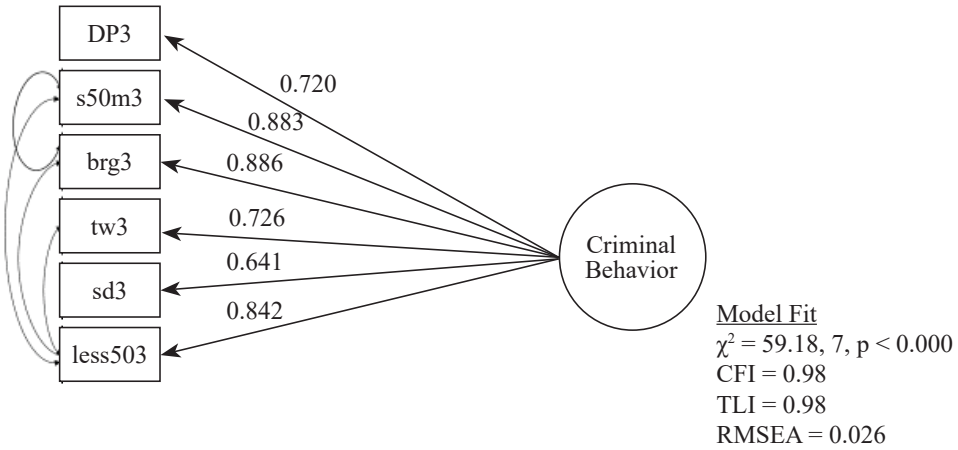
Formal Labeling in Full Model (b= 0.246, SE= 0.032, B= 0.323)
* p ≤ .05 ** p ≤ .01 *** p ≤ .001

Figure 1: Measurement Model for Juvenile Delinquency



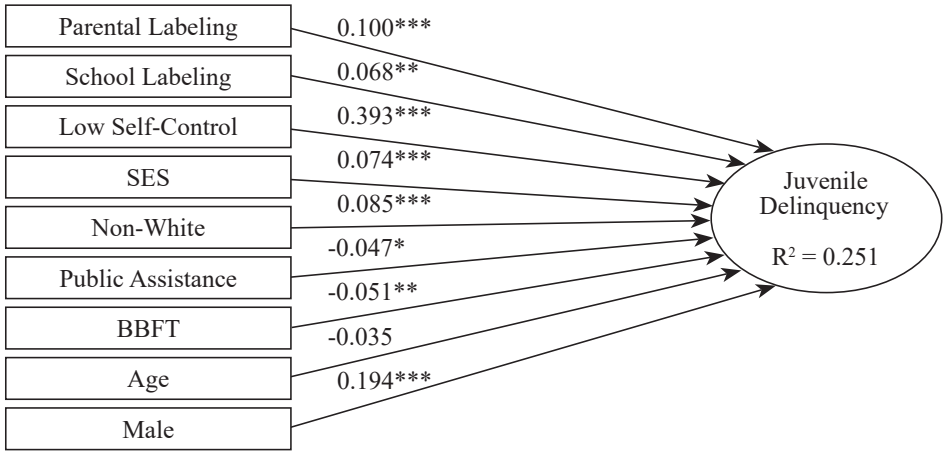
Notes: All paths are significant. The small double-headed arrows are error terms.
The χ^2 value and degrees of freedom are corrected for using the MLSMV estimator. Only the p-value should be interpreted for model fit (Muthen and Muthen, 1998-2010).

Figure 2: Measurement Model of Criminal Behavior



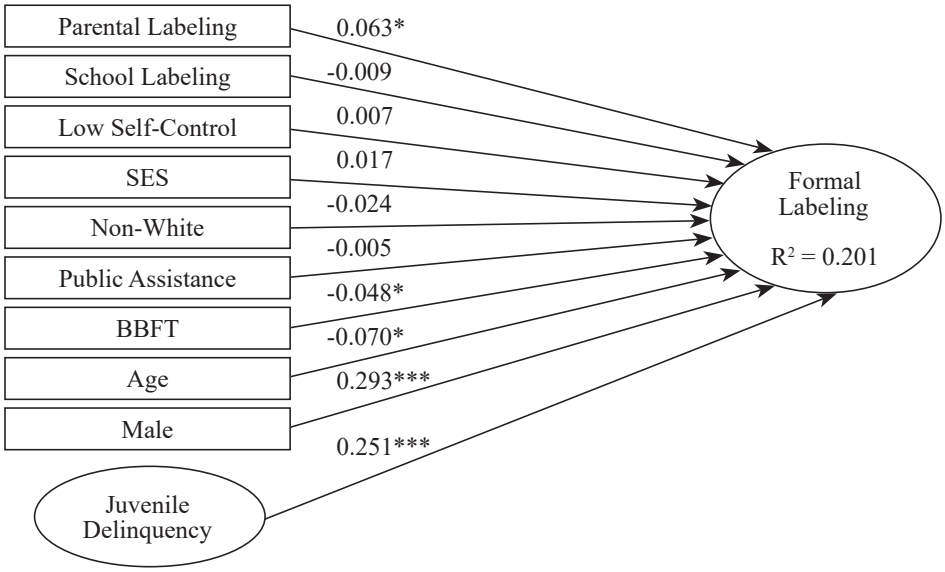
Notes: All paths are significant. The small double-headed arrows are error terms. The χ^2 value and degrees of freedom are corrected for using the MLSMV estimator. Only the p-value should be interpreted for model fit (Muthen and Muthen, 1998-2010).

Figure 3: Structural Model of Juvenile Delinquency



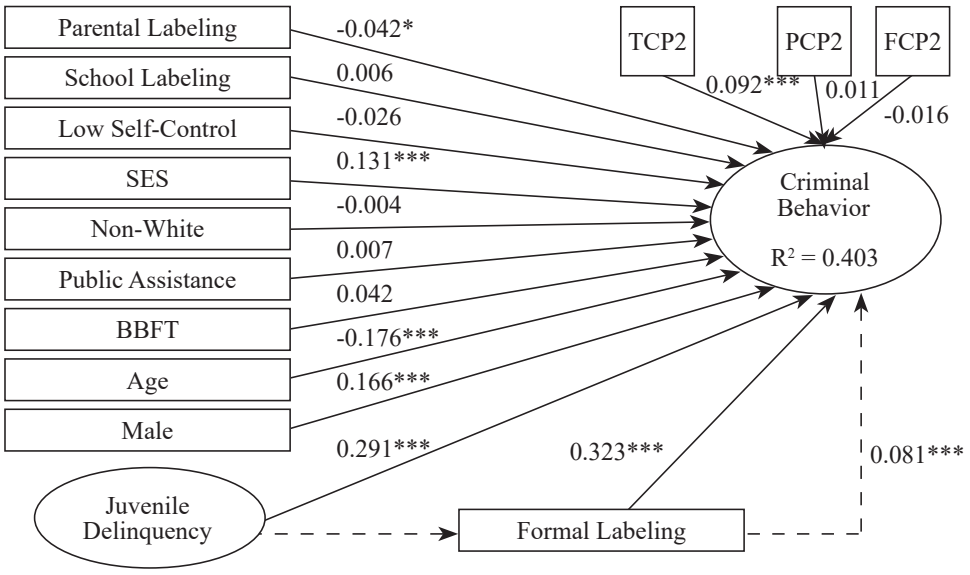
Notes: Standardized estimates reported. * p ≤ .05 ** p ≤ .01 *** p ≤ .001

Figure 4: Structural Model of Formal Labeling



Notes: Standardized estimates reported. * p ≤ .05 ** p ≤ .01 *** p ≤ .001

Figure 5: Structural Model of Criminal Behavior



Notes: Standardized estimates reported. * p ≤ .05 ** p ≤ .01 *** p ≤ .001

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