FORMAL AND INFORMAL LABELING EFFECTS ON LATER SELF-REPORTED NON-VIOLENT AND VIOLENT DELINQUENCY

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The effects of formal and informal labeling on later self-reported non-violent and violent delinquency.

By

Meghan M. Mitchell

The Supervisory Committee certifies that this ***disquisition*** complies with North Dakota State University's regulations and meets the accepted standards for the degree of

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ABSTRACT

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This research examines the impact of formal and informal labeling on self-reported violent and non-violent delinquency. This longitudinal research design utilizes cohort 15 from the Project on Human Development in Chicago Neighborhoods (PHDCN) at two different points in time. This research not only evaluates the effect of formal labeling (arrest) but also determines the effect of informal labeling (warning and releasing) by police officers. Specifically, the hypotheses assess if labeling affects minority youth differently than white youth. Using nested ordinary least square re and logistic regression models, the results indicate that labeling only operates in simple models containing few variables. The apparent effects of labeling on non-violent delinquency are accounted for in the complete model by previous delinquent behavior, living in a two-parented home, and having a parent with a criminal record. Moreover, the apparent effects of labeling are diminished in the complete model predicting violent delinquency once controlling for the effects of race (Black), gender (male), lower income level, and having a parent with a criminal record.

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CHAPTER 1. INTRODUCTION

Classical labeling theory argues that formal contact with the criminal justice system increases the likelihood that an individual will commit future criminal acts. Tannenbaum (1938) formulated the beginning components of labeling theory. His beginning contributions were further developed by Lemert's (1967) contributions of primary and secondary deviant behavior. According to labeling theory, contact with the criminal justice system can leave individuals feeling outcast and stigmatized, or feeling like an "outsider", which results in subsequent criminal acts (Becker, 1963). Following the development of labeling theory, the theory was subjected to harsh criticisms (Hirschi, 1980; Wellford, 1975) and was considered dead by 1985 (Paternoster & Iovanni, 1989). However, labeling theory has made a resurgence following the influential work of Paternoster and Iovanni (1989). One of their suggestions was that researchers must account for intervening variables when empirically testing labeling theory.

More recent evaluations of labeling theory have taken many of the critics' suggestions into account and strengthened the resulting empirical analyses. An example of such improved analyses can be found in studies where the effects of formal and informal labeling on future criminal behavior are empirically separated. Formal labeling is a result of contact with the criminal justice system that results in a record; this can be a result of multiple situations, but the most common situations would include being arrested, spending time in a detention center, and being placed in a youth correctional center. Formal labeling has been shown to increase serious crime (Bernburg & Krohn, 2003), increase deviance, (Bernburg, Krohn, & Rivera,

2006) and drug use(Ray & Downs, 1986). Informal labels, however, are applied to individuals by members of society, such as teachers, parents, and peers. These labels are often in reaction to deviant or unaccepted behaviors (Matsueda, 1992). As noted in research by Heimer and Matsueda (1994), informal labeling from parents leads to an increase in acts of deviance.

Deviance amplification is often the theoretical construct of interest for informal and formal labeling literature (Klein, 1986; Bernburg et al, 2006). This means individuals who are labeled participate in higher frequencies of deviance than they did prior to labeling. In summary, traditional labeling literature focuses on the effects that formal and informal labeling have on future rates of deviance. However, the literature does not account for a specific type of informal labeling, contact with police that does not lead to formal sanctioning. The literature suggests that a sizeable portion of juvenile contact with police is informally handled (Black & Reiss, 1970; Brunson & Weitzer, 2009; Meyers, 2004). Specifically, this informal contact with police can be extremely detrimental for minority youth, leading them to engage in more delinquency(Brunson & Weitzer, 2009; Rios, 2011).

This study evaluates the effect of formal and informal labeling on future delinquent behavior using data from The Project on Human Development in Chicago Neighborhoods (PHDCN). This research conducts a specific test of the effects of formal and informal labeling on non-violent and violent delinquency while controlling for non-violent and violent delinquency at time1. After examining the main effects, this research determines whether race and labeling type interact to create an effect above and beyond the effect of those variables individually. In the

chapters that follow I provide an extensive overview of the literature on labeling theory, focusing specifically on the impact of formal and informal labels and possible interactions across racial groups. Next, based upon the gaps in existing knowledge, I develop models to determine the effects of formal and informal labeling on non-violent and violent delinquency. Racial interactions are explored in these models. I conclude with chapters that present the results of this research in light of previous research and make recommendations for future explorations in this area.

CHAPTER 2. LITERATURE REVIEW

Development of Labeling Theory

Labeling theory focuses on the criminological process of labeling individuals and the influence that label has on their future crime and delinquency. The basic premise of labeling theory is that negative societal reactions and formal contact with the criminal justice system lead to increases in future delinquency. The development of classical labeling theory was heavily influenced by Mead's (1934) social psychology. Mead noted that while adolescents participated in daily activities in their communities, which he referred to as "the game", they constantly constructed and reconstructed their meaning of self. The members of a community heavily influence an individual's construction of self. Furthermore, Mead (1934) noted that individuals develop their self-image in a two-step process: in the first step an individual's self-image is constructed by particular attitudes that others have towards the individual. In the second step, the individual is influenced by social attitudes of the generalized group to which the individual belongs. For example, juveniles might, in the first step, imagine their appearance as interpreted by others. In the second step, individuals might process their sense of self through a "looking-glass self," which suggests individuals imagine their appearance as interpreted by others, perceive the judgment that is based on their appearance, and finally, this process either gives them a self-feeling of pride or mortification (Cooley, 1964).

The research of Mead (1932) and Cooley (1964) focuses on societal reactions to behavior, and the impact those reactions have on a person's self-image. Tannenbaum (1938) took the formation of a self- image and expanded it by

incorporating how negative self-images and perceptions from others can lead to crime. Tannenbaum described a process that begins with random movement of children within neighborhoods. Because of a limited play area between buildings, children are forced to play in the same space where adults carry out their more sedate activities Adults who interact with these children continually define and label the behaviors of the children, and often the childish and playful behavior of the children is not tolerated by the adults. The adults prefer the children to move away from the high rises, which forces the children to play in the street. Now in the street, children have more contact with the police and some are arrested, which begins the process of labeling by authorities.

While Tannenbaum first developed his theory by examining behavior within high-rise developments, the same components of the theory are applicable in areas and situations outside of high-rise developments. In summary, Tannenbaum argues limited space in high-rise developments forces children to play in the streets, which increases the opportunity of contact with the police. Contact with the police can potentially lead to some individuals being labeled as deviant. For individuals who are labeled, the "dramatization of evil" process begins. This final process of labeling, according to Tannenbaum, allows for official labeling of the individual as a criminal or deviant. Being arrested, sent to correctional treatment, or being placed on probation, are all types of formal labeling; this dramatization process then changes the individual's attitudes and habits to resemble the perceptions other hold about them. These attitudes then begin to foster behavior that is consistent with their deviant self-

concept. Engaging in the same behavior that initially led to labeling can create a cycle: negative behavior leads to more labeling.

While Mead, Cooley, and Tannenbaum discussed children being labeled, Lemert (1967) presented the general theory of deviance, which contributed a very important component of labeling theory. He separated the labeling process into two steps, primary and secondary deviance. Primary deviance occurs when individuals at a young age frequently engage in minor delinquent behaviors, such as shoving others, calling names, and stealing objects worth a small monetary value. This form of deviance has minimal effects on the individual's psychological wellbeing because it does not result in official labeling. Because primary deviance consists of relatively harmless behavior and receives minimal social reactions, primary deviance does not affect an individual's perception of self or social roles. Most youth are not caught and formally sanctioned; however, repetitive deviant behaviors can begin to generate negative reactions from others within the community. Negative reactions can potentially lead to arrest, and then individuals are sanctioned and labeled. Secondary deviance begins as a result of youth being labeled as deviant by officials. The youth start perceiving themselves as deviant, and take on a deviant self-concept. This perception directs their actions, which encourages them to join groups of similarly labeled youth, and the situation becomes a reinforcing spiral.

According to Becker (1963), a deviant career begins with a societal reaction to a non-conforming act. The individual is caught by the police and publicly labeled, which can foster a drastic change in their self-identity. After the label is applied, the individual is separated from his/her associations and more likely to participate in a

deviant group. The process of a deviant lifestyle begins with the application of a label; the "deviant" label is especially detrimental because it is stigmatizing and sets the individual apart from the general society. A stigma encourages society to associate these individuals with negative stereotypes and undesirable traits (Goffman , 1963; Link & Phelan, 2001). When a labeled juvenile is continually shunned by conforming individuals, the labeled individual is forced to undergo a series of personal adjustments and begins to associate with others who are similarly shunned and labeled (Goffman, 1963). Deviant group association allows for social support for, and acceptance of, those individuals who have been rejected and labeled deviant by conforming society. Deviant individuals, or as Becker (1963) notes, "outsiders", are people who cannot be trusted to follow the rules of society.

Following the development of labeling theory and the contributions from the theoretical founders, Farrington (1977) stands out amongst the early researchers for his contributions to labeling theory. In a longitudinal study of delinquent youth at three different time points, Farrington observed that public labeling was not random; youth who had been caught and labeled for committing delinquent activities were more likely to be apprehended for future offenses. He further suggested that public labeling preceded deviance amplification. In other words, he concluded that those who had been labeled multiple times were more likely to engage in future criminal behaviors because of the repeated labeling. Other researchers found early support for the theory. Using a matched sample of 35 labeled youth with non-labeled youth, apprehension lead to an increase in delinquency for 71% of their sample, whereas apprehension did not affect delinquency levels for 14% of their sample (Gold &

Williams, 1969).In conclusion, labeling theory was founded in elements of social psychology, which claim that an individual's sense of self is constructed from daily societal reactions (Cooley, 1964; Mead, 1934). Individuals who spend more time playing in the streets are more likely to have contact with the police, than those individuals who are not playing in the streets. Initial contact and arrest begins a "dramatization of evil" process (Lemert, 1967). This process essentially changes the trajectory of an individual's behavior from a primary deviant into more secondary deviance behaviors. An individual transforms from engaging in primary deviance, which consist of trivial, delinquent behaviors, to secondary deviance. Secondary deviance is where a person has been labeled consecutively and they begin to engage in more delinquent acts and develop a deviant self-concept.

Critiques of Labeling Theory

Following its period of popularity in the 1960s, researchers questioned whether labeling individuals affects their self-perceptions. Although Farrington (1977) and other researchers found support for the theory (Lemert, 1967; Mead, 1934; Tannenbaum, 1938), other tests of the theory did not produce similar results (Gove, 1980; (Tittle, 1975). Most of the criticisms were based on theoretical limitations of the theory or the failure to find empirical support for the theory. Other researchers, such as Tittle (1975) and Paternoster and Iovanni (1989), also strongly criticized the theory for relying on a simplistic model for explaining secondary deviance. Tittle (1975) concluded that labeled individuals should have higher recidivism rates compared to the rates of recidivism for those who have not been labeled. He suggests that any contact with the criminal justice system can be

stigmatizing; therefore, those sent to a correctional center (the ultimate label) should have much higher rates of recidivism compared to those who were just arrested. However, the inaccuracies with the existing data on arrest make it difficult to determine if this is a valid argument. Schur (1969) also noted the theory did not consist of a clearly defined set of propositions or testable hypotheses. According to his evaluation of labeling theory, these inadequacies made the evaluations of labeling theory meaningless.

Thorsell and Klemke (Thorsell & Klemke, 1972) stated that, "the validity of the currently accepted hypothesis that the labeling process typically reinforces deviant behaviors seems to rest more upon its repeated assertion by labeling analysts than upon a substantial body of empirical evidence and carefully reasoned conclusions" (p. 397). Furthermore, while evaluating the labeling process for delinquents, Gibbs (1974) concluded that, contrary to the assertions of labeling theory, after an individual's sentencing, they saw themselves as less deviant and had better self-concepts than before the court trial. The improved self-concepts were reportedly due to some offenders noting that contact with the juvenile justice system encouraged them to change their lifestyles. Also, contact with police has been shown to have a minimal impact on young boys self- concept, ability to retain friends, and problems at school (Foster, Simon, & Reckless, 1972). Finally, in an evaluation of labeling theory and juvenile delinquency, Hirschi (1980) heavily criticized Tannenbaum's research concluding that no evidence is presented to support labeling theory. He summarized his critique by saying that labeling theory was merely stating an obvious and

expected relationship between prior offending and future criminality, which is not merely a result of labeling.

Following many criticisms, Paternoster and Iovanni (1989) concluded that labeling theory was dead by 1985; although they provided many suggestions for using the theory as a framework to conduct research. Other researchers also have made suggestions for conducting studies using labeling theory (Tittle 1975; Thorsell & Klemke, 1972; Schur 1969). Although these suggestions were made prior to the demise of labeling theory, early researchers did not always implement them in their research. Suggestions to strengthen the theory from the researchers listed above are summarized into sections below that focus on the offenders, their behaviors, and finally, on the sanctions given. Thorsell and Klemke (1972) suggest that the impact of labeling will have varying effects on different individuals.. According to Schur (1969), as well as Paternoster and Iovanni (1989), formal labeling is only the end product of a series of discriminatory processes within society. Because of these various effects, researchers need to formulate research designs which explore interaction effects and make use of more varied samples. Researchers should not only evaluate labeling theory using individuals who have a criminal record, but researchers also need to look at those individuals in the early stages of deviance (Thorsell & Klemke, 1972). Researchers also need to look at the effects of various labels and sanctions, not simply focusing on the effects of formal labeling (Mahoney, 1974; Paternoster & Iovanni, 1989).

Formal and Informal Labeling

As noted earlier, not all delinquent behavior results in the behavior being recognized and the juvenile being arrested and sanctioned; however, when individuals are caught and formally labeled it may increase deviant behavior (Lemert, 1951; Tannenbaum, 1938; Black & Reis 1970). This process can be detrimental because it may encourage other individuals to dehumanize and outcast the deviant (Becker, 1963). According to the literature on labeling theory, there are two types of labels that can be applied to a juvenile: formal and informal labels. Formal labels are those given by the juvenile justice system. This includes but is not limited to arrests, sanctions, and correctional treatments. However, an informal label is often applied by those individuals with whom the juvenile has contact. These types of labels are often the result of reactions from parents, peers, and teachers. This label is influenced more by societal reactions to and perceptions of the offender.

Some criminologists have evaluated the formal and informal process concurrently (Adams, Robertson, Gray-Ray & Ray, 2003; Ray & Downs, 1886;Thomas & Bishop, 1984). However, due to the different effects of informal and formal labeling on an individual, it is important to look separately at the literature behind each type.

The effects of formal labeling are well noted in the research of Tannenbaum (1938) and Lemert (1967). Tannenbaum discussed the "dramatization of evil," which begins once an individual has been labeled; Lemert added the idea of secondary deviance. Secondary deviance occurs when individuals begin to accept the label that society has placed on them and now they begin to act according to society's perceptions. Although, secondary deviance is more concerned with an individuals

psychological processing, developing a mindset of delinquency and engaging in delinquent behavior will lead to deviance amplification. In a reassessment of Lemert's theory, Newton and Sheldon (1975) found support for the secondary deviance hypothesis. Their research on 36 males concluded that those who had already been labeled had more contact with the police, lower employment levels, and received negative reactions from teachers when compared to those who had not been formally labeled. Klein's (1986) research randomly assigned youth into three categories: juveniles released to the community, court petitioned, and community treatment. His research found that distinctive sanctions had different outcomes. Those released to the community had lower recidivism rates compared to those petitioned to court. Individuals petitioned to court had a recidivism rate of 73% compared to individuals who were counseled and released with a recidivism rate of 49%. These rates were calculated 27 months after the commission of the act. Klein noted his results did support labeling theory, and these effects could not be accounted for with between-group differences.

Formal labeling is just one potential source of a stigmatizing label. Typically, informal labeling research has focused on the impacts of informal reactions from parents, peers, teachers, and members of society to delinquent behavior. Informal contact with the criminal justice system (e.g. warn and release) may also ignite informal labeling and negative reactions from members of society (Anderson, 1999; Rios, 2010). Informal contact with the criminal justice system could be considered a type of informal labeling, but this variable is not frequently evaluated in labeling research.

Although assessing the impacts of informal contact with the police is rare, Rios (2011) evaluated the effects of informal contact for a minority population in his ethnographic study. For three years Rios observed and talked with black and Latino males. His research found that minority youth are labeled deviant because of non-violent, day-to-day behaviors. This labeling begins what Rios calls "hyper-criminalization." According to his research, "hyper-criminalization" means that non-violent, minority youth are experiencing direct and indirect punishment that is generally only attributed to violent youth. This punishment and alienation is not only projected from criminal justice institutions, but also institutions such as the family and schools. Hyper-criminalized youth end up feeling like outcasts and they begin to perceive themselves as criminals.

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Informal contact with the police begins the informal labeling or "hyper-criminalization" process. Informal contact with the police was very common in Rios's

(2011) sample, but it is also found in other literature. Research by Black and Reis (1970) found that many juveniles are not apprehended for their delinquent activities. They found that police exercise a great deal of discretion when dealing with juveniles and that minority youth are less likely to have their behaviors dismissed by the officer. This research also suggests that many police contacts are informally handled with strategies of informal conversations and scare tactics. Similar results were found when researchers chose to replicate Black and Reis' (1970) work. According to the replication, only 16% of the juvenile contacts ended in arrest, and minorities, especially African Americans, were contacted more frequency than whites (Lundman, Sykes, & Clark, 1978). Recording accurate data pertaining to informal contact with juveniles is very difficult because of inconsistent police reporting strategies, and because police statistics only capture a portion of police interactions (Meyers, 2004). In research by Meyers (2004), she found that only 13% of 654 juvenile contacts ended in arrest. This statistic shows that police discretion when handling juveniles varies greatly, especially when the delinquency is minor (Carrington & Schulenberg, 2004; Parker & Sarre, 2008)Despite police handling cases informally, police are still dealing with the juvenile. They are just handling the juvenile in a manner that does not require formal reporting (Meyers, 2004). Although official police data does not always record informal contacts with juveniles, the current contains a self-report measure concerning being warned and released by police in the past year. This study assesses whether informal and formal labeling affects future non-violent and violent delinquent behaviors.

Non-Violent and Violent Delinquency

Research evaluating labeling theory often uses offending as an outcome variable (Bernburg & Krohn, 2003; Bernburg et al., 2006; Klein, 1986;Ray & Downs, 1986). Research suggests that individuals who were petitioned to court were more likely to engage in delinquency when compared to those youth who were referred to community treatment programs and those youth who were immediately released (Klein, 1986).

Research focused on labeling theory generally does not differentiate general delinquency from violent delinquency. This research will determine if the labeling process has an impact on the type of behavior an individual commits. Research by Shannon (1982) using a longitudinal design of juveniles' contacts with police, referrals to court, and court decisions, found that labeling individuals increases the frequency of contact they have with police for serious offending. The current research will assess if labeling of individuals leads to either non-violent or violent delinquency following a lapse in time.

Racial/Ethnic Differences

Racial differences in delinquency are often assessed in criminal justice literature and are a vital component to this research. However, the present study is concerned with a potential difference in the impact of labels on different racial groups (which is derived by interactions terms) instead of differences in the proportion of various racial groups that undergo labeling, as is common in previous labeling research (see Engen, Steen & Bridges, 2002 for examples). Beyond the differential application of formal labels by race and ethnicity, some researchers have found that

the effect of this formal labeling on future offending may vary by race. One illustration is noted in Bernburg and Krohn's (2003) research. They concluded that contact with the juvenile justice system was significantly related to deviance amplification for African Americans and disadvantaged youth, but not for Hispanics or white youth (Jensen, 1972). Rios's study (2010), suggested that non-violent minority youth are "hyper-criminalized". This means that non-violent, minority youth are informally and formally treated and punished by the criminal justice system, their families, and community members as if they were engaging in violent acts. According to Rios (2010), hyper-criminalization is often experienced only by minority youth because informal and formal labeling affects minority youth differently than white youth. The criminal justice system's reaction to day–to-day behaviors of minority youth has a significant impact on their future well-being. For example, the youth in Rios' (2010) study who had informal contact with police officers felt alienated, ashamed, and outcast. These effects are not projected to be as significant for white youth, because day-to-day informal labeling is suggested to have a stronger interactive effect and impact on non-white youth.

Although some literature suggests labels have varying impacts on different individuals, other research does not find consistent results. Research by Piquero and Brame (2008) found no evidence of racial differences while evaluating labeling effects on official and self-reported delinquency. Although there were differences between Blacks and whites in self-reported offenses, none of the models were statistically significant. Klein's (1986) research concluded higher socio-economic status youth, females, and Anglo-Americans were most affected by labeling. Other research also

supports the notion that labels have the strongest effect on Anglo youth (Ageton & Elliot, 1974). Some research has found peer and teacher labeling was significant in the prediction of serious delinquency, but no racial differences in the effect of this informal labeling were found (Adams et al., 2003).

Overall, the specific racial effects of labeling are inconsistent. Hirschfield (2008) suggests the labeling effect within inner-city communities is diminishing, which may help explain some of the disparate findings with regards to racial differences in the effect of labeling over time. Using qualitative research on labeling in mainly African American inner city Chicago communities, he found that being arrested has become a normalized routine for individuals and their families. Individuals did not feel isolated from their families, peers, or teachers as a result of labeling, nor did they believe labeling would affect their self-concept. Hirschfield (2008) concludes that it is difficult for labels to attach to and isolate urban African American youth because they often are victims to suspect misidentification and wrongful arrest. Therefore the African Americans in his study were protected from the negative effects postulated by labeling theory.

In this research, the differential impact of labeling across racial groups is a vital component. This research will evaluate the effects of labeling on Black, White, and Hispanic youth. Disaggregation of race is important for determining if the labeling process varies by race. The dataset contains enough Black and Hispanic youth to warrant testing for race by labeling interaction, opposed to the more common explorations of solely Black and White differences. Because much of the literature on race and labeling is mixed, this study will assess if labeling has a

differential impact across racial categories, opposed to formulating a hypothesis about a specific racial effect.

Other Potential Factors

When critically evaluating labeling theory, it is vital to include potential contributors to criminal behavior that have been validated in previous criminological literature. An illustration is found in the literature of some who claim that the criminal justice system is not racist. The criminal justice system is often blamed because it contains a higher proportion of minority individuals than their percentage in the general population. Estrich (1995) believes the high minority representation in the criminal justice system is attributed to other factors, such as individual differences and parental influences, these factors impact a person prior to contact with the criminal justice, i.e., the criminal justice system inherits the problem as opposed to creating the problem.

Risk factors can be considered as potential causes of delinquency. Antisocial and criminal behavior of parents has been shown to predict the delinquency level of juveniles. Some literature has suggested that a juvenile's level of delinquency is related to the level of offending of their parents (Nijhof, De Kemp, & Engels, 2009). The delinquent patterns of boys have also been shown to correlate with their father's criminal behavior. Parental offending has been found to correlate with juvenile delinquency even when researchers controlled for family influences, socio-economic level, and individuals risk factors (Farrington, Coid, & Murray, 2009). Other studies have also found support for intergenerational offending transmission for males (Hagan & Palloni, 1990) and females (Farrington et al., 2009). Wasserman et al.

(2003) suggests that parenting style and ability is the single most contributing factor to a child's success. They conclude that divorced parents and a broken family structure all contribute to defiant and antisocial behavior exhibited by children.

Another risk factor for delinquency assessed in the literature is the impact of parental socio-economic status. Research has found that lower socio-economic status levels are correlated with lower birth weights, premature births, and higher content of lead in a child's system. These factors can affect the early development of a child, which can affect later behavior patterns, and delinquent behaviors (Braveman, Sadegh-Nobari, & Egerter, 2008).

As demonstrated in this section, many factors can influence a juvenile's behavior, and this study includes indicators of the risk factors, such as parent's employment status, parent's salary, two-parent vs. single-parent household, and whether an individual's parent has a drug problem, drinking problem, or a criminal history. Assessing the impact of these variables are necessary to determine if labeling has an effect on future offending once known predictors of offending are included in the models.

The Current Study

To address the previous suggestions on how to accurately test labeling theory, this research improves upon the existing knowledge by evaluating the impact of formal labeling (as measured by arrest) and a relatively unexplored form of informal labeling (warned and released by police), on two different forms of deviance, violent and non-violent delinquency. The effects of informal labeling (warned and released) have not been thoroughly evaluated in the literature on labeling theory, because it is

difficult to accurately track informal contacts with police (Meyers, 2004). The research also explores the idea of a racial interaction in the impact of labeling, based explicitly on the findings of Rios (2011). Finally, the present research determines if labeling at time one causes different types of delinquency (non-violent and violent) at time 2.

In the chapter that follows I present the PHDCN data set and the measures used in the current study. I conclude with the hypotheses to be tested in this research.

CHAPTER 3. METHODS

The PHDCN

The sample for this study was drawn from a multi-wave study evaluating the impacts of families, schools, and peers on the development and behavior of Chicago youth and adolescents. The Project on Human Development in Chicago Neighborhoods (PHDCN) is a longitudinal database that contains 7 cohorts of subjects(Earls, Brooks-Gunn, Raudenbush, & Sampson, 2005). The subjects in the PHDCN are classified by their age during the first wave of surveys and placed in the appropriate cohort (0, 3, 6, 9, 12, 15, and 18). Surveys were administered to 80 of 343 neighborhood clusters. The 80 clusters were chosen from 21 strata that aimed to comprise equal proportions of race and socio-economic status combinations. Participants for the study were selected from block groups, which were randomly selected within each neighborhood cluster. Subjects and their primary caregivers (if the subject is under the age of 18) were administered various surveys during each wave. Wave 1 surveys were completed from 1995-1997 with a mean response rate of 75%; wave 2 was completed from 1997-2000 with a mean response rate of 85.93%; and wave 3 surveys were completed from 2000-2001 with a response rate of 78.19%. The present study uses waves 1 and 2 for Cohort 15 with a total of 696 participants; this cohort has a response rate of 71.6 % during wave 1 and 82.7% during wave 2. Consistent with Hirschi and Gottfredson's (1983) age of crime curve argument, cohort 15 was chosen because this is the age when a sizeable proportion of the youth begin to engage in delinquency. A cohort under the age of 15 would contain fewer individuals engaging in delinquency, and choosing an older cohort would assess

individuals when the majority of them were beginning to desist from delinquency leaving little remaining deviance in time 2. By monitoring the labels applied at an early stage in their lives, the study will determine if and what type of label affects future non-violent and violent delinquency.

Measures

Dependent Variables

This research focuses on the effect of labeling; therefore, the study contains two outcome measures, non-violent delinquency and violent delinquency. The responses to the following questions were combined into a scale for non-violent delinquency at time 2 (α=0.66[1], M=14.09, SD=53.30). The cumulative responses to the following questions ranged from 0 to 920, and the 95% confidence interval ranged from 9.30 to 18.89.

- How many times in the last 12 months have you ran away from home and stayed away for an overnight?
- How many times in the last 12 months have you been absent from school without an excuse?
- How many times in the last 12 months have you caused trouble in a public place so that people complained about it, such as being loud or disorderly?
- How many times in the last 12 months have you purposely damaged or destroyed property that did not belong to you? (For example, breaking, cutting, or marking up something)

[1] Throughout this document, alpha (α) refers to a non-adjusted estimate.

- How many times in the last 12 months have you stolen something from a store?
- How many times in the last 12 months have you taken something that did not belong to you from your place of work or your employer?
- How many times in the last 12 months have you taken something that did not belong to you from a car?
- How many times in the last 12 months have you knowingly bought or sold stolen goods?
- How many times in the last 12 months have you stolen a car or motorcycle to keep or sell it?
- How many times in the last 12 months have you used checks illegally to pay for something?
- How many times in the last 12 months have you used credit or bankcards without the owner's permission?
- How many times in the last 12 months have you sold marijuana or pot?
- How many times in the last 12 months have you thrown objects, such as rocks or bottles, at people (other than events you have already mentioned?

Responses to these questions were then summed to create a continuous count of all non-violent delinquent acts in the previous year. The non-violent delinquency count at time 2 is not normally distributed (kurtosis= 185.01) and is positively skewed (skewness= 12.04). Because of this distribution, research suggests log transforming the dependent and corresponding independent variable, non-violent

delinquency at time 1 (skewness= 10.49; kurtosis= 135.82)(Field & Miles, 2010). The log transformation improved the variable's normality for non-violent delinquency at time 1(skewness= 0.86; kurtosis= 0.53) and non-violent delinquency at time 2 (skewness= 0.88; kurtosis= 0.14). The log transformation for non-violent delinquency at time 1 and time 2 is used throughout the OLS regression models.

The dichotomous responses to the following questions were combined into a dummy variable for violent delinquency at time 2. (α=0.62).

- Have you ever hit someone with whom you lived with the idea of hurting them (lead in)?
    - Was anyone you hit hurt seriously enough to see a doctor (yes=1)?
- Have you ever hit someone with whom you did not live with the idea of hurting them (lead in)?
    - Was anyone you hit hurt seriously enough to see a doctor (yes=1)?
- Have you ever hit attacked someone with a weapon?
- Have you ever used a weapon or force to get money or things from people?
- Have you ever had or tried to have sexual relations with someone against their will?
- Have you ever shot someone?
- Have you ever shot at someone?
- Have you ever been in a gang fight?

In response to the following questions, 85.77% of the sample had committed 0 violent acts; 9.23% of the sample had committed 1 violent act; 2.69% of the sample

had committed 2 violent acts; 1.92% of the sample has committed 3 violent acts; only 0.19% of the sample had committed 4 violent acts; and finally, 0.19 % of the sample had committed 5 violent acts. Due to the lack of variation in violent behavior at time 2, the variables were dichotomized where a yes to any of these questions received a code of 1, while those who report none of these activities were coded as 0.

Independent Variables

Labeling

There are two independent variables used to assess the effects of informal and formal labeling at time one. To determine the effect of formal labeling, I use the response to the following question:

- Of the contacts you have had with the police over the past 12 months, on how many occasions were you arrested or charged with an offense?

Because of the small amount of variation in the arrest measure (M=0.68. SD=1.80); responses equal to or greater than one will be considered formal labeling at time one.

The assessment of informal contact with the criminal justice system, or informal labeling, is determined by the following question at time one:

- As a result of any police contact in your life, have you ever been warned and released?

Positive responses are coded as 1, while negative responses will be coded as 0.

Racial/Ethnic Differences

In order to examine interaction effects across racial categories, I will include two dummy variables for race: Black and Hispanic. The reference category will be white. Because this study is focused on the effects of labeling across racial/ethnic

categories, the dummy variables for race are assessed separate from general demographic variables.

Family Characteristics

Various family characteristics were included in the analysis. Salary is a self-reported parental measure of the amount of income a family made in one year. Values for salary are as follows: 1≤$5, 000; 2= $5,000- $9,999; 3= $10,000- $19,999; 4= $20,000- $29,999; 5= $30,000- $39,999; 6= $40,000-$49,999; 7≥ $50,000. Parental employment status is coded 1 for employed and 0 for unemployed. Family structure is used as an indicator for two parent households; a 1 indicates two parent households, where a 0 indicates a single headed household. The following answers were coded as living with two parents (1):

- Parental caregiver and partner married, both being biological
- Parental caregiver and partner married, but only parental caregiver is biological, step, or an adoptive parent
- Parental caregiver is not biological, step, or adoptive, but is married
- Parental caregiver is biological, step, or adoptive and partner is present
- Parental caregiver and partner not married, but parental caregiver is biological, step, or adoptive

The following family structures were coded as 0 for single headed households:

- Mother and grandmother live in household
- Parental caregiver is biological, step, or adoptive and no partner is present
- Parental caregiver is not biological and no partner is present

A mother or father with a drug problem, drinking problem or criminal record, is assessed by three separate indicators DRUG, DRINK, and CRIMINAL, respectively. A 1 indicates the subject has a mother or father with a drug problem, drinking problem, or a criminal history; a 0 indicates their parents have no corresponding problems.

Control Variables

This study has two main control variables. The first is a count of non-violent delinquency at time 1 and the other control variable is a dichotomous indicator of violent delinquency at time 1. These measures are comprised of the same questions that are outlined above for the corresponding dependent variables at time 2, but are measured at time 1. This allows the research to determine whether labeling at time 1 causes changes in non-violent and violent delinquency at time 2 over and above the likely link between non-violent delinquency at time 1 and violence at time 1. Another control variable used in this analysis is the sex of an individual. Males are coded as 1 and females are coded as 0. Age is eliminated from the analysis because of the limited amount of variability within the indicator. All of the youth are part of the same cohort; consequently, there is minimal variation in age.

In light of the previous research, this study will evaluate the following hypotheses

1. Formal labeling will lead to non-violent delinquency at time two for all youth.

    1a. Formal labeling will have a differential impact on non-violent delinquency across racial categories.

2. Informal labeling will lead to non-violent delinquency at time two for all youth.

    2a. Informal labeling will have a differential impact on violent delinquency across racial categories.

3. Formal labeling will lead to violent delinquency at time two for all youth.

    3a. Formal labeling will have a differential impact on non-violent delinquency across racial categories.

4. Informal labeling will lead to violent delinquency at time two for all youth.

    4a. Informal labeling will have a differential impact on violent delinquency across racial categories.

Contributions of the Current Study

As much of the empirical research for labeling theory is inconclusive, this research adds to the evidence in multiple ways. This research will assess the impact of two types of labeling (formal and informal) by the criminal justice system on two separate types of delinquency, non-violent and violent. Moreover, this research will also determine if the impacts of both formal and informal labeling are consistent across racial categories. This research adds to the existing knowledge by using a longitudinal design, which lessens many of the causal ordering problems associated with cross-sectional data. And finally, the data contains a large portion of Latino youth; therefore, comparisons can be made about the relative impact of labeling on Blacks, Whites, and Hispanics.

The data were analyzed using two different types of analysis. Ordinary least squares (OLS) regression is used for non-violent delinquency, because of the

continuous dependent measure, and logistic regression is used to analyze violent delinquency, due to the dichotomous nature of the outcome measure.

Multiple model improvement scores are calculated to assess the appropriate OLS and logistic regression models. Nested models are used to conduct a strategic and comprehensive assessment of the ideas of Rios (2011), which have not been validated by empirical assessments of labeling theory. Some non-significant variables are retained throughout the nested models to accurately test the racial interactions found in Rios' (2011) research.

In an attempt to assess Rios' (2011) findings the models for OLS and logistic regression contain the same variables. Model 1 contains only two race variables, Black and Hispanic. Model 2 then calculates the effect of the dummy variable Black and labeling (formal or informal). The interaction term for race and labeling is added with model 3, and model 4 determines if a relationship is significant between labeling and delinquency while controlling for previous delinquent behavior. Finally, model 5 is the complete model, containing all variables. Model improvement for the OLS regression is determined by assessing the amount of variance that is explained in each model. Logistic regression improvement is calculated by determining the difference in the -2* log likelihood between the models. Model improvement is calculated between: model 2 and model 3; model 3 and model 4; model 4 and model 5. The next chapter contains the results for the univariate, bivariate, and multivariate statistics. Following the univariate statistics, the results are first discussed for non-violent delinquency, followed by the results for violent delinquency.

CHAPTER 4. RESULTS

Delinquency Models

In the section to follow, the descriptive statistics are presented, followed by the interpretations of the logistic and OLS regression models. As discussed in the literature review, the effects of labeling theory are often minimal or non-existent, because of this difficulty; a liberal interpretation of significance ($p < .10$) is used to explore all potential impacts of the theory. The tables contain a detailed breakdown of specific significance levels for the variables of interest.

Descriptive Statistics

Demographic statistics for this research were collected during wave 1 survey administration, and Table 1 displays the frequency distributions for the categorical variables. Hispanics are the largest portion of the sample (46.5%) with 37.8% Black, and Whites accounting for the smallest percentage in the cohort (15.7%). In regard to the labeling variables, 9.1% of the cohort had been arrested at time 1, while 25.2% of the cohort had been warned and released at time 1. According to the statistics in Table 2, 8.28% of individuals had been formally and informally labeled. Police had informally labeled 16.87% of the subjects, but those subjects had not been formally labeled. Only 1.07% of the sample had been formally labeled but had not experienced any informal labeling by the police.

According to Table 2, just over 20% of the cohort reported being violent at time 1 and 14.2% were violent at time 2. Almost 65% of youth had employed parents and 64.7% lived in two-parent households. Seventeen percent had a parent with a drug problem, 29.3% of the youth had a parent with a drinking problem, and finally, 24.8%

of the juveniles reported parents with a criminal record. According to the data, 13.55% of the cohort lived with two parents and had a parent with a criminal parent. Approximately half of the cohort (50.99%) lived in a two-parent home and did not have a parent with a criminal history.

Table 1
Frequency Distribution for Categorical Variables

N=696	*n*	Percentage
Demographics		
White	105	15.70%
Black	253	37.82%
Hispanic	311	46.49%
Male	325	48.51%
Labeling		
Arrest	61	9.10%
Warned and Released	164	25.15%
Violent		
Violent T1	134	20.52%
Violent T2	74	14.23%
Parental Influences		
Employed	423	64.68%
Two Parents	428	64.65%
Drug Problem	112	17.00%
Alcohol Problem	193	29.29%
Criminal History	163	24.81%
Salary		
<$5,000	70	11.06%
$5,000-$9,999	48	7.58%
$10,000-$19,000	128	20.22%
$20,000-$29,999	130	20.54%
$30,000-$39,000	81	12.80%
$40,000-$49,000	68	10.74%
>$50,000	108	17.06%

Subjects who lived in a single parent household and had a parent with a criminal records composed 11.26% of the sample, while 23.20% of the sample lived in a single

parented household but did not have a parent with a criminal record. In regard to race and parental criminal record, 7.91% of Hispanic subjects had a parent with a criminal history. African American individuals had the highest percentage of parents with a criminal record (12.48%) where whites had the lowest percentage at 4.41%.

Table 2

Cross-Tabulation of Arrest by Warned and Released

		Formal Label (Arrested)	
Informal Label		Yes	No
(Warned and Released)	Yes	54 (8.28%)	110 (16.87)
	No	7 (1.07%)	481 (73.77%)

Descriptive statistics for the continuous variables are shown in Table 3. The mean salary indicator was 4.17 ($20,000- $29,999). The average number of delinquent acts at time 1 was 12.88 (SD= 48.36) and the mean for delinquent acts at time 2 was 14.09 (SD= 53.30)[2].

Table 3

Descriptive Statistics for Continuous Variables

	n	Mean	Standard Deviation	95% Confidence Interval
Age	670	15.16	0.32	15.14, 15.19
Salary	633	4.17	1.89	4.02, 4.32
Delinquency T1	594	12.88	48.36	8.98, 16.77
Delinquency T2	478	14.09	53.30	9.30, 18.87

According to Table 4, both formal and informal labeling at time 1are positively correlated with non-violent delinquency at time 2. Those who have been informally labeled have higher rates of delinquency at time 2 than those who have not been

[2] Marked skewness and kurtosis indicators are reported in the methods section.

labeled. Similarly, individuals who have been formally labeled at time 1 also have higher rates of non-violent delinquency at time 2. Non-violent delinquency rates at time 1, as well as violent behavior at time 1, are significantly and positively correlated with non-violent delinquent acts at time 2. Individuals who have a parent with a criminal record have higher non-violent delinquency rates than those who do not have a parent with a criminal record. No significant correlations exist between non-violent delinquency at time 2 and the following independent variables: male, Black, Hispanics, salary, employed, two-parents, drinking problem, drug problem, or criminal history.

According to the Table 4, those who have been formally labeled are more likely to be violent at time 2 compared to those who have not been labeled. Informal labeling is also significantly and positively correlated with violent delinquency at time 2. Similar to non-violent delinquency, non-violent delinquency at time 1 and violent behavior at time 1 are positively associated with violent delinquency at time 2. Although gender and race are not significantly correlated with non-violent delinquency, males and Blacks are more likely to engage in violent delinquency at time 2, compared to females, whites, or Hispanics. Individuals with a parent who has a criminal record are more likely to engage in violent delinquency at time 2. No significant correlations exist between violent delinquency at time 2 and the following independent variables: Hispanic, salary, employed, two-parent household, drinking problem, or drug problem.

Non-Violent Delinquency

The following section presents the results of the OLS regression models

Table 4

Correlation Matrix

Variable	1	2	3	4	5	6	8	9	10	11	12	13	14	15	16
1. Delinquency Time 2	1.00														
2. Violence Time 2	0.35***	1.00													
3. Warned & Released	0.21***	0.18***	1.00												
4. Arrest	0.09*	0.12**	0.49***	1.00											
5. Delinquency Time 1	0.41***	0.23***	0.40***	0.31***	1.00										
6. Violence Time 1	0.21***	0.26***	0.43***	0.33***	0.43***	1.00									
8. Male	0.06	0.12 **	0.11**	0.06	0.05	-0.04	1.00								
9. Black	-0.05	0.10 **	0.10**	0.03	0.02	0.16**	-.02	1.00							
10. Hispanic	0.03	-.04	-0.10**	-0.04	0.01	-0.12**	0.02	-0.68***	1.00						
11. Salary	-0.01	-0.06	-0.14**	-0.04	-0.04	0.01	0.01	-0.12**	-0.11**	1.00					
12. Employed	0.01	-0.00	0.02	0.07	0.03	-.03	-0.00	-0.00	-0.04	0.37***	1.00				
13. Two-Parent	0.04	0.02	-0.20***	-0.03	-0.10**	-0.09*	0.13**	-0.38***	0.31***	0.38***	0.07	1.00			
14. Drink	0.07	-0.12	0.07	0.03	0.08	0.09*	-0.09*	-0.15**	-0.01	0.08*	0.11**	0.00	1.00		
15. Drug	-0.01	-0.00	0.07	-0.06	0.07	0.10*	-0.07	0.13**	-0.15**	-0.03	-0.00	-0.14**	0.34***	1.00	
16. Criminal	0.10**	0.09*	0.12**	-0.01	0.07	0.08	0.02	0.12**	-0.15**	0.05	0.05	-0.10**	0.31***	0.39***	1.00

* p<= .10; **p<= .05; ***p<.001

assessing the impact of labeling on non-violent delinquency. All of the models are interpreted as the effects of the independent variable when all other variables within the model are held constant. When interpreting the coefficients of a log transformed dependent variable and a non-log transformed independent variable, Bruin (2006) suggests exponentiating the coefficient (expβ). The outcome reflects a change in the geometric means between the variable and reference category. Interpreting the coefficients between a log transformed independent variable and log transformed dependent variable, is completed by taking 1.10 ^β. This outcome reflects a percentage change in the dependent variable with a 10% increase in the independent variable.

Table 5 presents the models for formal labeling and non-violent delinquency at time 2. According to model 1, the mean rate for non-violent delinquency at time 2 does not vary by race. Overall model 1 is not significant and explains 0% of the variance. Model 2 does not retain the Hispanic variable and only assesses the impact of two variables, Black (relative to non-Black) and arrest. This model is statistically significant but explains virtually no variation. Formally labeled youth have a 75.9% (exp .57= 1.768) higher mean of non-violent delinquency at time 2, compared to non-labeled individuals. Model 3 incorporates the interaction variable (Black and arrested), but this effect is not significant. Model 3 is not a better predictor of non-violent delinquency than model 2; therefore, the interaction variable is not incorporated into the next model. In addition to Black and arrest, delinquent behavior at time 1 is included in model 4. This model explains 16% of the variance in non-violent delinquency at time 2. A 10% increase in non-violent delinquency at time

Table 5

OLS Regression for Formal Labeling for Non-Violent Delinquency

	Model 1		*Model 2*		*Model 3*		*Model 4*		*Model 5*	
	b	SE	b	SE	b	SE	b	SE	b	SE
Black	-0.16	0.19	-0.06	0.14	-0.07	0.14	-0.16	0.1	-0.06	0.15
Hispanic	-0.16	0.18								
Formal			0.57**	0.26	0.51*	0.30	-0.08	0.26	-0.27	0.27
Black * Formal					0.08	0.24				
Delinquency Time 1							0.47***	0.05	0.49***	0.06
Male									0.11	0.13
Salary									-0.04	0.04
Employed									0.02	0.15
Two-Parent									0.27*	0.16
Drink									0.13	0.15
Drug									-0.26	0.19
Criminal									0.32*	0.17
	R^2=0.00		R^2=0.01		R^2=0.01		R^2=0.16		R^2=0.19	
	Ad R^2=-0.00		Ad R^2=0.00		Ad R^2=0.00		Ad R^2=0.16		Ad R^2=0.17	
	F= 0.47		F= 2.46*		F= 1.66		F= 27.81***		F= 9.47***	

* $p<0.10$; * *$p<0.05$; *** $p<0.01$;

1increases non-violent delinquency at time 2 by 5% (1.10 ^0.47= 1.05). Controlling for delinquency at time 1, formal labeling is no longer significant and changes direction. Model 5 is the best model. It contains all of the independent variables, is statistically significant and explains 17% of the variance in non-violent delinquency. A 10% increase in non-violent delinquency at time 1, increases non-violent delinquency at time 2 by 6% (1.10^.59=1.06). The mean for non-violent delinquent counts at time 2 is expected to be 31% (exp .27= 1.31) higher for individuals with two parents compared to those who have one parent. Also, individuals with a parent who is a criminal have a mean non-violent delinquency count that is 38% (exp .32= 1.38) higher than the mean non-violent delinquency count for those who do not have a criminal parent.

Table 6 assesses the relationship between informal labeling and delinquency at time 2. According to model 1, which overall is not significant and accounts for 0% of the variance, there are no racial differences in non-violent delinquency counts at time 2. Model 2, which retains the variable Black and adds informal labeling, is statistically significant and accounts for 4% of the variance in the dependent variable. The mean non-violent delinquent count is 101% (exp .70= 2.01) higher for informally labeled youth compared to non-labeled youth. The interaction of Black and labeling is incorporated into model 3. This model accounts for the same amount of variance as model 2, and the interaction term between Black and informal labeling, is not significant. Because the interaction between race and informal labeling is not significant, the variable is eliminated from the model and non-violent delinquency at

Table 6

OLS Regression for Informal Labeling and Non-Violent Delinquency

	Model 1		*Model 2*		*Model 3*		*Model 4*		*Model 5*	
	b	SE	b	SE	b	SE	b	SE	b	SE
Black	-0.16	0.19	-0.13	0.14	-.18	0.16	-0.18	0.13	-.07	0.15
Hispanic	-0.16	0.18								
Informal			0.70***	0.16	0.62**	0.21	0.25	0.17	0.17	0.18
Black * Informal					0.20	0.32				
Delinquency Time 1							0.43***	0.06	0.46***	0.06
Male									0.09	0.13
Salary									-0.04	0.04
Employed									0.01	0.15
Two-Parent									0.29*	0.17
Drink									0.11	0.156
Drug									-0.23	0.19
Criminal									0.31*	0.17
	R^2=0.00		R^2=0.04		R^2=0.04		R^2=0.17		R^2=0.19	
	Adj R^2=-0.00 F= 0.47		Adj R^2=0.04 F= 10.22***		Adj R^2=0.04 F= 6.89**		Adj R^2=0.16 F= 28.68***		Adj R^2=0.17 F= 9.46***	

* p<0.10; * *p<0.05; *** p<0.01;

time 1 is added to model 4. Model 4 is statistically a better predictor of non-violent delinquency at time 2 than model 2 and explains 16% of the variance. According to this model, a 10% increase in non-violent delinquency at time 1 increases non-violent delinquency at time 2 by 4% (1.10 ^.43=1.04). The apparent effect of informal labeling seen in model 2 is accounted for by the variation in non-violent delinquency at time 1. Model 5, which includes all of the independent variables, is the best predictor of non-violent delinquency explaining 17% of the variance. Non-violent delinquency at time 1 is still significant ($p<0.01$) with a 10% increase in delinquency at time 1 increasing delinquency at time 2 by 5% (1.10 ^. 49= 1.05). Family indicators are also significant. Children with two parents have a 31% (exp .27= 1.31) higher mean delinquency count than single parented children. Also, children with a parent who is a criminal have a 38% (exp .32= 1.38) higher mean non-violent delinquency count compared to children with no criminal parent.

Violent Delinquency

The results of the logistic regression for formal labeling and violent delinquency are displayed in Table 7. According to model 1 (R^2=. 03, p< .01)[3], Blacks have 192% higher odds of being violent at time 2 compared to whites; while Hispanic were not statistically different from whites. Hispanic was not significant in model 1; therefore, the variable is dropped. Formal labeling is added to Black in model 2 (R^2= .06, p< .01). The dummy variable for Black and the formal labeling variable were significant and positively related to violent delinquency at time 2. Blacks have 107% higher odds of

[3] The R^2 calculation that is used throughout the logistic regression section is a calculation of Max-rescaled R^2.

Table 7

Logistic Regression for Formal Labeling and Violent Delinquency

	Model 1			*Model 2*			*Model 3*			*Model 4*			*Model 5*		
	B	*SE*	Odds Ratio	B	*SE*	Odds Ratio	B	*SE*	Odds Ratio	B	*SE*	Odds Ratio	B	*SE*	Odds Ratio
Black	1.07**	0.44	2.92	0.73**	0.26	2.08	0.63**	0.27	1.87	0.53*	0.27	1.69	0.74**	0.33	2.10
Hispanic	0.41	0.44	1.51												
Formal				1.26***	0.36	3.52	1.00**	0.43	2.72	0.66*	0.34	1.93	0.30	0.45	1.35
Black * Formal							0.26	0.27	1.30						
Violence Time1										1.45***	0.29	4.27	1.78***	0.34	5.94
Male													0.99**	0.31	2.70
Salary													-0.15*	0.09	0.86
Employed													0.26	0.34	1.30
Two-Parent													0.51	0.36	1.66
Drink													-0.28	0.37	0.76
Drug													-0.37	0.45	0.69
Criminal													0.59*	0.35	1.81
		Model $\chi^2(2)=9.604$, $p<0.01$ $R^2=0.03$ -2 Log L=415.89			Model $\chi^2(2)=19.39$, $p<0.01$ $R^2=0.06$ -2 Log L=406.10			Model $\chi^2(3)=20.61$, $p<0.01$ $R^2=0.07$ -2 Log L=398.53			Model $\chi^2(3)=42.29$, $p<0.01$ $R^2=0.14$ -2 Log L=377.46			Model $\chi^2(10)=59.49$, $p<0.01$ $R^2=0.22$ -2 Log L=316.62	

Model Improvement:
Model 2 v. 3: Chi ^{2}=7.57 df (1) ***
Model 2 v. 4: Chi ^{2}=28.64 df (1)***
Model 4 v. 5: Chi ^{2}=60.84 df (7)***

* $p<0.10$; * *$p<0.05$; *** $p<0.01$;

being violent at time two compared to non-Blacks, and being arrested at time 1 increases the odds of violent delinquency at time 2 by 252% compared to those not arrested. Model 3, adds an interaction for Black and labeling and explains 7% of the variance in violent delinquency. Model 3 was not a better predictor of non-violent delinquency than model 2. Since the interaction between race and arrest was not significant, I will determine if the significant relationships still remain between race, labeling, and violence at time 2 when controlling for violent delinquency at time 1. Adding violent delinquency in model 4 at time 1 improves the model fit and explains 14% of the variation in violent delinquency at time 2. Violent behavior at time 1 increases the odds of violent delinquency at time 2 by 327%. The dummy variable Black increases the odds of violent delinquency at time 2 by 69% relative to non-Blacks. Formally labeled youth have 93% higher odds of violent delinquency at time 2, compared to non-labeled youth. Model 5 includes all of the independent variables and is the best predictor of violent delinquency, explaining 22% of the variance. Being Black increases the odds of violent delinquency at time 2 by 109% relative to non-Blacks. Furthermore, being male (170%) and having a parent with a criminal record (15%) increases the odds of violence at time 2, compared to females and those with non-criminal parents. A 1-unit increase in salary decreases the odds of violence by 14%. With all other variables held constant, being violent at time 1 increases the odds of violence at time 2 by 494% relative to non-violent youth.

The effects of informal labeling on violent delinquency at time 2 are presented in Table 8. According to model 1, which is significant and accounts for 3% of variation in violent delinquency at time 2, Blacks have 192% higher odds of violence at time 2

Table 8

Logistic Regression for Informal Labeling and Violent Delinquency

	Model 1			*Model 2*			*Model 3*			*Model 4*			*Model 5*		
	B	*SE*	Odds Ratio	B	*SE*	Odds Ratio	B	*SE*	Odds Ratio	B	*SE*	Odds Ratio	B	*SE*	Odds Ratio
Black	1.07**	0.44	2.92	0.62**	0.26	1.87	0.46	0.355	1.58	0.48*	0.27	1.62	0.76**	0.32	2.14
Hispanic	0.41	0.44	1.51												
Informal				1.27***	0.267	3.57	1.09**	0.37	2.96	0.76**	0.31	2.13	0.28	0.36	1.33
Black * Informal							0.40	0.54	1.49						
Violence Time 1										1.25***	0.31	3.50	1.71***	0.37	5.55
Male													0.97**	0.31	2.63
Salary													-0.16*	0.09	2.134
Employed													0.28	0.34	1.33
Two-Parent													0.56	0.36	1.76
Drink													-0.30	0.37	0.74
Drug													-0.41	0.45	0.66
Criminal													0.62*	0.35	1.87
		Model χ^2 (2)=9.60, p<0.01 R^2= .03 -2 Log L=415.89			Model χ^2 (2)=29.77, p<0.01 R^2= .10 -2 Log L=389.68			Model χ^2 (3)=30.31, p<0.01 R^2= .10 -2 Log L=389.14			Model χ^2 (3)=45.52, p<0.01 R^2= .15 -2 Log L=373.62		Modelχ^2(10)=60.22, p<0.01 R^2= .22 -2 Log L=315.31	

Model Improvement
Model 2 v. 3: Chi ^{2}= 0.54 df (1)
Model 2 v. 4: Chi ^{2}=16.06 df (1) ***
Model 4 v. 5: Chi ^{2}=58.31 df (7) ***

* p<0.10; * *p<0.05; *** p<0.01;

compared to the odds for whites. Model 2 retains Black and introduces the effect of informal labeling. This model accounts for 10% of the variation in violence at time 2. The dummy variables for Black and informal labeling are significant. Blacks have 87% higher odds of violent delinquency at time 2 than do whites. Informal labeling at time 1 increases the odds of violent delinquency at time 2 by 257%. Model 3 introduces the interaction between Black and labeling. The interaction is not significant. Since the interaction term is not significant, in model 4 I determine if a relationship still exists between Black and informal labeling and violence at time 2, when controlling for violent behavior at time 1. According to model 4, which explains 15 % of the variation, the dummy variables for Black and informal labeling are still significant predictors of violence at time 2 when controlling for violent behavior at time 1. Although being violent at time 1 increases the odds for violent delinquency at time 2 by 250% compared to non-violent youth, Blacks have a by 62%, higher odds of violent delinquency relative to non-Blacks. Informally labeled individuals have 113% higher odds of violence at time 2 relative to non-labeled youth. Model 5, which is the best model, containing all of the independent variables and explaining 22% of the variations in violent delinquency at time 2. Males have 163% higher odds of violent delinquency relative to females. Some parental influences are significant predictors for violence at time 2. A 1-unit increase in the salary indicator decreases the odds that a child will be violent at time 2 by 14%. Parents who have a criminal record increase the odds that their children will be violent at time 2 by 87% compared to non-criminal parents.

CHAPTER 5. DISCUSSION AND CONCLUSION

The purpose of this study was to critically evaluate labeling theory to determine the effect of informal and formal labeling on later self-reported non-violent and violent delinquency. Much of the research on labeling theory fails to find support; however, an ethnographic study by Rios (2011) found an interesting labeling effect for minority youth in particular. His research suggests that informal contact with the police negatively affects minority individuals differently than it affects white youth. Essentially, white youth experience fewer negative repercussions as a result of similar labeling. In light of much of the literature on labeling theory finding no support, Rios' findings warrant further testing. In order to critically determine if what Rios observed exists in a quantitative analysis, this study contains multiple OLS and logistic regression models that assess the impact of formal and informal labeling on non-violent and violent delinquency. Because labeling theory is discredited in much of the literature(Paternoster & Iovanni, 1989), I chose to use nested models, so I was able to determine if labeling affects delinquency in the simplest form (labeling increasing delinquency) and then further determining when that relationship no longer exists.

As demonstrated in the literature review, labeling theory was discredited because of the inability to accurately predict criminal behavior using longitudinal research designs. When using a complete model that contains all independent variables, being labeled has no effect on non-violent or violent delinquency at time 2. Although labeling in this study fails to impact juvenile recidivism, the results lend support to other criminological theories. According to the complete models, there are

only two factors that predict both non-violent and violent delinquency at time 2. The first variable that predicts later delinquency is previous delinquency (non-violent or violent). This concept is consistent with Gottfredson and Hirschi's (1990) general theory of crime. This theory claims that juveniles with low self-control engage in criminal activities because they lack the ability to abstain from delinquent behaviors. Engaging in crime is part of their natural pursuit of self-interests and individuals tend to disregard any long-term potential consequences their behavior may have. Within the criminology field, there have been multiple empirical tests of Hirschi's control theory(Kempf-Leonard, 1993), and empirical research supports the theoretical assertion (Nagin & Paternoster, 1991) that previous behavior is the best predictor of future behavior.

This research also supports some tenants of a learning theory. This theory argues that criminal behavior is learned through interactions with intimate groups, such as parents and peers (Akers, 1985). When viewed through a learning theory perspective, this research supports the idea that parental influences are very important in determining their children's behavior. Individuals with a parent who has a criminal record were more likely to engage in both violent and non-violent delinquency at time 2 and can be detrimental to their children's behavior (Farrington et al., 2009; Nijhoff et al., 2009). Previous delinquency and parental criminal engagement were the only variables that were predictive of both types of delinquency, which lend support to other criminological theories, but not labeling theory.

Few studies have assessed the impact of labeling on two separate types of

delinquency (non-violent and violent). The complete models were the best predictors of non-violent delinquency at time 2. Because there is no effect of formal or informal labeling, the results for the final models were very similar. According to these models, engaging in delinquency at time 1 increased non-violent behavior at time 1. As noted above, having a parent with a criminal record was also predictive of delinquency. Interestingly, individuals who lived in a two-parent home were more likely to engage in non-violent delinquency at time 2. This finding is contrary to previous research on family structure, which suggests having a single parent increases the chances of delinquency and becoming criminal (Demuth & Brown, 2004; Green, Gesten, Greenwald & Salcedo, 2008). There are some potential explanations for these findings. One explanation is that the non-violent delinquency indicator in this study is comprised of acts that are not unusual behaviors for juveniles to engage in. Therefore, it would not be uncommon for normal adolescents to engage in these minor acts before they desist from delinquency (Moffitt, 1993). It is also plausible that single parented individuals are not engaging in minor forms of delinquency and are more likely to engage in more serious acts of non-violent delinquency, that are not accounted for by this research. Finally, because of the exploratory nature of this research, these results are concluded using a p-value of <. 10.

The indicators for violent delinquency for the complete models are much different. As reported above, previous violent behavior and having a parent with a criminal record are associated with violent delinquency at a later time. In addition to those variables, and consistent with the subculture of violence (Wolfgang & Ferracuti,

1982), males were more likely to engage in violence at time 2 than were females. Furthermore, Blacks were more likely to engage in violent delinquency than were non-Blacks. Research on the subculture of violence is inconsistent, with some research lending support for the theory (Anderson, 1999), and other research has concluded that the subculture of violence does not exist (Cao, Adams & Jensen, 1997). Despite the contradictory literature, this study finds support for part of the subculture of violence argument, in that males and Blacks were more likely to engage in violence compared to females and whites. Other predictive variables for non-violent and violent delinquency are discussed below. I will continue to discuss the basic models that assess if labeling ever exhibits an impact on delinquency, remembering that any effects are apparent and diminish once including all of the variables.

Although the overall effect of formal and informal labeling is not significant when controlling for all variables, this research shows that in models that only contain labeling and race, labeling (formal or informal) has an apparent effect on delinquency. If the basic premise of labeling theory appears to be accurate for a bivariate argument with race and labeling, then the next step in exploring the theory is to see if racial effects or interactions of race and labeling exist. No racial difference exists among Blacks, Hispanics, and whites in regard to later non-violent delinquency. Though, research for over 20 years has focused on the overrepresentation of minorities within the criminal justice system (Kempf-Leonard, 2007), this research finds that self-reported delinquency acts are similar among races for non-violent delinquency. However, with violent delinquency, racial differences do exist; Blacks

have higher odds of being violent at time 2 than do non-Blacks. While Blacks have higher odds of violent behavior at time 2 relative to non-Blacks, there is no interaction between race and labeling. Blacks who are labeled do not experience a double jeopardy and are not more likely to be violent than are labeled non-Blacks.

The following results are interpreted keeping in mind that there is no effect of labeling when it is introduced into the complete models, and interactions do not exist even in basic models. I determined if the apparent effect of labeling remains when controlling for delinquent behavior at time 1. Previous delinquent behavior, living in a two-parent household, and having a parent with a criminal history, account for the apparent effect of labeling. Once those variables are accounted for in the model, no labeling effect exists for non-violent delinquency. Similarly for violent delinquency, previous delinquency, race (Black), sex (male), salary, and parental criminal history account for the apparent effect that labeling had on violent delinquency at time 2.

As demonstrated above, the effects of labeling do not operate consistent with labeling theory when multiple independent variables are included in the analysis. Hence, exploratory models were reviewed to determine if and when labeling theory works. Observational data may lead one to believe that a relationship exists between labeling and delinquency. The apparent effect is observed in basic models where race (Black) and labeling (formal and informal) are significant predictors of violent behavior at time 2; but once controls for other factors are entered, this apparent relationship disappears. The labeling effect that researchers were observing disappears once you account for other variables, such as race (Black), sex (male), previous delinquent behavior, parental salary, two-parented households, and

parental criminal record.

Although this study has produced interesting results, this research is not without limitations. When using the PHDCN, which is a longitudinal dataset, there can be problems with attrition rates. It could be possible that individuals who are not accounted for at time 2 are significantly different than individuals who are surveyed.. Following individuals, especially teenagers over a period of time can be difficult. If those who have higher rates of delinquency are also the same individuals who are more likely to be missing at time 2, then there may be some potential issues with the results. Some of those individuals may be institutionalized and not able to participate in the survey at time 2. Another potential limitation is using self-reported counts of delinquency. There is a longstanding debate within criminology, over the reliability and validity of self-reported delinquency measures (see Krohn, Thornberry, Gibson, and Baldwin, 2010). However, the findings of a substantial amount of criminology research would not exist without the use of self-reported measures, so when using self-reported indicators, it is necessary to keep in mind the limitations, and interpret the results cautiously (Huizinga & Elliot, 1986).

Future Research

As indicated by this research, labeling, whether formal or informal, does not impact future non-violent and violent delinquency. Future research should continue to evaluate the impact of labeling using specific models and critical tests. Specific testing would allow researchers to determine what variables accounted for labeling effects that were found in previous studies that support labeling theory. Further statistical testing of the theory, would allow criminologist to settle the debate within

the field, as to whether labeling theory affects later delinquency. Future research could evaluate the effects of the entire criminal justice system to determine if any portion of the system is having negative impact on juvenile recidivism rates. This research focused on labeling of individuals at the front end of the system (initial contacts). However, further research could statistically determine if a labeling effect exists during or after apprehension, by determining if different actions following custody impact recidivism (e.g., custody, court intake, and adjudication).

In summary, using specific model testing to explore the effects of labeling I was able to conclude that labeling theory does not predict non-violent or violent delinquency at time2. I was able to find an apparent effect of labeling, operating in models with very few indicators. However the minimal effects of labeling were explained by differences in other independent variables (Black, male, delinquency time 1, violent time 1, two- parent household, salary, and criminal record) that were introduced in the final models. When doing so, other influences, such as race, previous delinquency, and family level indicators are more predictive of future delinquency than labeling.

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