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Journal of Research in Crime and Delinquency 2006; 43; 67
DOI: 10.1177/0022427805280068

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Journal of Research in Crime and Delinquency
Volume 43 Number 1
February 2006 67-88
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10.1177/0022427805280068
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Official Labeling, Criminal Embeddedness, and Subsequent Delinquency

A Longitudinal Test of Labeling Theory

Jón Gunnar Bernburg
University of Iceland and Icelandic Research Council
Marvin D. Krohn
University at Albany–SUNY
Craig J. Rivera
Niagara University

This article examines the short-term impact of formal criminal labeling on involvement in deviant social networks and increased likelihood of subsequent delinquency. According to labeling theory, formal criminal intervention should affect the individual's immediate social networks. In many cases, the stigma of the criminal status may increase the probability that the individual becomes involved in deviant social groups. The formal label may thus ultimately increase involvement in subsequent deviance. We use panel data of a sample of urban adolescents to examine whether involvement in deviant social groups mediates the relationship between juvenile justice intervention and subsequent delinquent behavior. Using measures from three successive points in time, the authors find that juvenile justice intervention positively affects subsequent involvement in serious delinquency through the medium of involvement in deviant social groups, namely, street gangs and delinquent peers.

Keywords: *labeling theory; deviant peers; delinquency*

In recent years, there has been a revived interest in the labeling approach in the field of criminology. After a period of criticism and rejection of labeling theory (see Goode 1975; Hirschi 1980; Tittle 1980), scholars have repeatedly pointed out that by modifying the theory and elaborating on the social processes involved, the labeling approach can complement some of

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the more established theories of deviant behavior (Paternoster and Iovanni 1989; Sampson and Laub 1997). A prominent theme that has reemerged in revisionist work on labeling theory has been an emphasis on the social-structural consequences of deviant labeling that trigger processes leading to movement into deviant groups (Bernburg and Krohn 2003; Paternoster and Iovanni 1989; Sampson and Laub 1997; Zhang and Messner 1994). In light of the role that the individual's social ties to unconventional groups play in criminological theory (Thornberry and Krohn 1997; Warr 2002), such processes should be of great interest to criminology. Yet existing research bearing upon this line of investigation has been both limited and inconclusive (Paternoster and Iovanni 1989).

The classic labeling theory argues that formal societal reaction to crime can be a stepping stone in the development of a criminal career (Becker 1963; Lemert 1967; Tannenbaum 1938). However, theorists have suggested several different processes through which public labeling may influence subsequent involvement in crime and deviance (see Liska and Messner 1999:118-25). Howard S. Becker (1963) focuses on the general impact the deviant label has on further embedding the individual into deviant social groups. Deviant groups represent a source of social support in which deviant activities are accepted. Moreover, deviant groups often provide social shelter from those who react negatively toward the deviant status. The labeled person is thus increasingly likely to become involved in social groups that consist of social deviants and unconventional others. Although several labeling theorists have mentioned this point (e.g., Schur 1971; Tannenbaum 1938), Becker (1963) highlights the role of deviant networks in explaining how public labeling increases the likelihood of subsequent deviance. "A final step in the career of a deviant is movement into an organized deviant group" (p. 37). The deviant group provides collective rationalizations, definitions, and opportunities that encourage and facilitate deviant behavior (p. 38-9). Becker thus implies that involvement in deviant networks should mediate the influence of public deviant labeling on subsequent involvement in deviance.

Although there have been numerous attempts to examine whether official labeling is associated with subsequent crime and delinquency (e.g., Fisher and Erickson 1973; Hagan and Palloni 1990; Horowitz and Wasserman 1979; Klein 1974; McEachern 1968; Palarma et al. 1986; Ray and Downs 1986; Smith and Paternoster 1990; Thomas and Bishop 1984), research on the mediating role of social ties to deviant others has been rare (see, however, Farrington 1977; Johnson, Simons, and Conger, in press). In fact, researchers have rarely studied the presence of intermediate processes that may translate deviant labeling into subsequent deviance (see, however, Bernburg and Krohn 2003; De Li 1999; Sampson and Laub 1993). "By failing to consider

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the requisite intervening effects, the bulk of [labeling] studies do not constitute a valid test of labeling theory" (Paternoster and Iovanni 1989:384).

In the present study, we use a sample of urban adolescents to examine the effect of formal criminal labeling on subsequent delinquency, focusing on the intervening role of peer social networks. Using measures from three successive periods, we test if juvenile justice intervention positively influences subsequent involvement in serious delinquency through increased probability of involvement in deviant groups, namely, association with gangs and delinquent peers.

Criminal Labeling and Criminal Embeddedness

Official, or formal, adjudication for an offense may create or enhance the reputation of a juvenile as a criminal in his or her community, most notably among other teenagers in the school and among parents in the community. As Tannenbaum (1938) notes, formal criminal proceedings signify the "dramatization of evil." When an act of deviance is publicly announced and defined as immoral, as occurs during formal sanctions, the immoral character of the actor is highlighted.[1] Insofar as the information about the formal sanction spreads throughout the community (Wilkins 1964:45-104), others will tend to define the juvenile as a criminal deviant. Hence, stereotypical images of criminals in the mainstream culture are driven to the forefront of the person's life (Becker 1963; Goffman 1963; Lemert 1967). Simmons (1965/1966) has found that stereotyping of social deviants is usually negative; deviants are often thought of as irresponsible and lacking self-control.

There are a few processes by which labeling may increase the probability of associating with deviant peers. Labeled teenagers may become aware of stereotypical beliefs in their communities, or they may think that these beliefs exist based on their learned perception of what people think about criminals; fearing rejection, they may withdraw from interaction with conventional peers.[2] Goffman (1963) has pointed out that social interaction between "normal" people and the stigmatized is often characterized by uneasiness, embarrassment, ambiguity, and intense efforts at impression management, and that these experiences are felt by those who bear the stigma as well as those who do not. "The very anticipation of such contacts can . . . lead normals and the stigmatized to arrange life so as to avoid them" (p. 13). Nonlabeled adolescents and labeled adolescents may tend to avoid one another in order to avoid uncomfortable interaction dynamics. As one study has found, adolescents who become known as delinquents in their communities often say that they feel most comfortable associating with

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delinquent peers in safe distance from the righteous gaze of concerned parents in the community (Bernburg 2003a).

Warr (2002) has underscored the importance of the principle of homophily (people associating with others who are similar to them on a number of different dimensions) in friendship formation. Official labeling highlights the similarity shared by delinquents while also differentiating them from those who are not labeled. Researchers have documented negative effects of official labeling on structured opportunities (Bernburg 2003b; Bernburg and Krohn 2003; Davies and Tanner 2003; De Li 1999; Sampson and Laub 1993) and parental bonding (Stewart et al. 2002) and studied the effects of labeling on the development of a deviant self-concept (Jensen 1972; Matsueda 1992) and on deviant attitudes (Ageton and Elliott 1974). These consequences may result in the individual seeking deviant groups in order to be with those who are in a similarly disadvantaged social position, who share their deviant self-concept and attitudes, and perhaps provide opportunities that the conventional world no longer does. If so, increased association with deviant peers should be of particular importance in translating official labeling into subsequent deviance during adolescence.

There is some evidence supporting the idea that perceived deviant labeling by significant others (subjective labeling) leads to subsequent association with deviant peers. Adams (1996) has used longitudinal survey data to study the impact of subjective labeling on subsequent association with delinquent peers and involvement in delinquency. Subjective labeling was measured by asking respondents if they thought that significant others (parents, friends, teachers) perceived them as a "bad kid" and as someone who "breaks rules" and "gets into trouble." As predicted, subjective labeling had positive effects on ties to delinquent peers and involvement in delinquency in successive periods. Similarly, Heimer and Matsueda (1994) and Matsueda (1992) have shown that parental appraisals of adolescents as rule-violators have positive effects on subsequent delinquency and that these effects are partly mediated by peer delinquency. However, these studies have not examined the potential factors determining subjective labeling, including the possible role of official labeling.

In addition to the direct impact of official labeling on associating with deviant others, there is also the probability that the official label will lead indirectly to increased participation in deviant groups through exclusion from conventional peer groups. Labeling theory argues that the deviant reputation may become "quintessential material for others in their ascription of motives to an actor" (Paternoster and Iovanni 1989:375). The negative stereotypes associated with the criminal label may create feelings of fear and mistrust among peers and other members of the community toward juveniles

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known to have been officially treated as criminals (see Dodge 1983). The perception that negative beliefs exist in the community may also lead youths to avoid publicly known deviants, "fearing that social stigma may rub off" (Liska and Messner 1999:125). Hence, the labeled juvenile is at increased risk of being excluded from conventional social networks in the community, resulting in movement into deviant groups. Although research is limited on this point, studies have found a relationship between official reaction to delinquency and peer rejection (Zhang 1994).

Although we are unable to examine peer rejection in the present study, our data allow us to test directly the link between official labeling and subsequent social ties to deviant peers, thus providing a test of one central proposition in labeling theory, namely, that ties to deviant others mediate the influence of official labeling on subsequent deviance (Becker 1963).

The Mediating Role of Criminal Embeddedness

The proposition that involvement in deviant networks leads to increased levels of delinquent activity has been widely studied by criminologists (e.g., Akers 1985; Hagan 1993; Hagan and McCarthy 1997; Haynie 2001; McCarthy and Hagan 1995; Thornberry and Krohn 1997; Thornberry et al. 2003; Warr and Stafford 1991). The concept of criminal embeddedness, introduced by Hagan (1993), is particularly relevant here. Criminal embeddedness refers to immersion, or involvement, in ongoing criminal networks. These networks can consist of more than just peers—they can also contain deviant family members or other acquaintances. The important point is that these individuals comprise a distinct network of which an individual is an "active" member and that this particular set of relationships is oriented toward criminal values, acts, and opportunities.

It is generally hypothesized that criminal embeddedness can directly increase delinquent behavior, perhaps through the learning of definitions favorable toward deviance and through modeling and reinforcement (e.g., Akers 1985; Warr and Stafford 1991). Delinquent peer associations constitute one component of criminal embeddedness. The causal effect of associating with delinquent peers on delinquent behavior has been well documented empirically (e.g., Elliott, Huizinga, and Ageton 1985; Jessor and Jessor 1977; Kandel and Davies 1991; Thornberry and Krohn 1997; Warr and Stafford 1991). Another form of criminal embeddedness is membership in a delinquent gang. Thornberry et al. (2003) found that youths who are members of a gang have higher levels of delinquent activity both during and after the time period of gang membership. This relationship holds even while controlling for peer delinquency.

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Although there is ample evidence supporting the causal role of deviant networks in the development of delinquency and crime, research on the potential role of deviant networks in translating official labeling into subsequent deviance and crime is both limited and inconclusive. In a study of English working-class males, Farrington (1977) examined whether criminal conviction affected subsequent contacts with delinquent peers. Farrington's findings did not support such an effect. Boys who were convicted of a crime by age 14 were no more likely to have delinquent friends at age 16 than boys not convicted. Johnson et al. (in press) have examined the long-term effects of official labeling from early through late adolescence using a small sample of rural, White males. Unlike Farrington's (1977), this study found official labeling in early adolescence to be associated with deviant peer associations in middle adolescence (three years later). However, the mediation hypotheses received incomplete support because deviant peer associations in middle adolescence did not have any significant effect on post-high-school delinquency. Johnson et al. (in press) concluded that the role of deviant peer associations in mediating the effect of official labeling on subsequent deviance may be more properly tested by using a closer temporal ordering of key variables.

In contrast to these inconclusive findings, the studies by Adams (1996; see also, Adams and Evans 1996), Heimer and Matsueda (1994), and Matsueda (1992) mentioned above found that delinquent peer associations mediated the effects of subjective labeling on subsequent delinquency.

Hypotheses and Analysis

The present analysis focuses on the impact of juvenile justice intervention in early and middle adolescence on both association with deviant groups and subsequent deviant behavior. Our discussion implies that embeddedness in deviant groups should mediate the effects of juvenile justice intervention on subsequent involvement in delinquent behavior. Figure 1 presents the main hypotheses. To ensure clear temporal separation between the independent, the mediator, and the dependent variables, the focal measures will be taken from three separate, successive points in time. We are particularly interested in initial or early contact with the juvenile justice system because these experiences are likely to have the most significant impact on youth. Specifically, adolescents who experience juvenile justice intervention at Waves 1 and 2 (ages 13.5 to 14; see below) should be more delinquent at Wave 4 (age 15) than those who do not. Moreover, this relationship should be mediated by the

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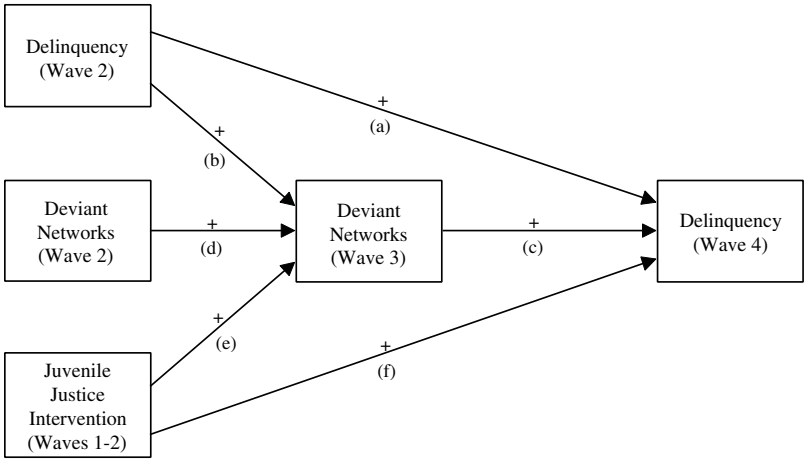
Figure 1
Causal Structure among Formal Criminal Intervention, Association with Deviant Networks, and Delinquency



fact that labeled youths are more likely to be involved in deviant networks at Wave 3 (age 14.5).

Several factors need to be controlled in testing the hypotheses. Controlling for initial levels of delinquency and involvement in deviant networks is crucial. The relationship between initial levels of delinquency and the probability of juvenile-justice intervention may generate an association between intervention and subsequent levels of delinquency. The same is true for involvement in deviant groups. We control for involvement in serious delinquency and substance use as well as initial involvement in deviant groups. We also control for gender, race and/or ethnicity, and impoverished family background. Race and gender have been shown to affect both the likelihood of formal criminal intervention (Piliavin and Briar 1964; Steffensmeyer, Ulmer, and Kramer 1998; Thornberry 1973; Worden and Shepard 1996) and involvement in delinquency (Blumstein et al. 1986). Also, low social status has been linked to increased likelihood of sentencing, net of seriousness of offense (Thornberry 1973), and to delinquent behavior (e.g., Farnworth et al. 1994).

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Method

The analysis is conducted with data from the Rochester Youth Development Study (RYDS), a multi-wave panel study of the development of drug use and delinquent behavior among adolescents and young adults. This panel is based on an initial sample of 1,000 students selected from the seventh and eighth grades of the public schools in Rochester, New York, during the 1987 to 1988 academic year. Interviews were conducted at six-month intervals with each adolescent and his or her parent or primary caretaker. All interviews were conducted in private; most were face-to-face settings, but in later waves some long-distance interviews were completed by telephone. Chronic truants and students who had left the Rochester schools were interviewed at their homes, as were most parents. Data on subjects were also collected from school, police, courts, and social-service agencies. Because we are particularly interested in the effect of early formal contact with the juvenile justice system, the current analysis uses data from Waves 1 to 4, when the subjects were between the ages of about 13.5 and 15.

Sample

The sampling plan of the RYDS was designed to oversample youth at high risk for serious delinquency and drug use, because the base rates for these behaviors are relatively low (Elliott, Huizinga, and Menard 1989; Wolfgang, Thornberry, and Figlio 1987). To accomplish this while still being able to generalize the findings to a population of urban adolescents, the following strategy was used. The target population was limited to seventh- and eighth-grade students in the public schools of Rochester, New York, a city that has a diverse population and a relatively high crime rate.

The sample was then stratified on two dimensions. First, males were oversampled (75 percent vs. 25 percent) because they are more likely than females to be chronic offenders and to engage in serious delinquency (Blumstein et al. 1986). Second, students from high crime areas of the city were oversampled on the premise that subjects residing in high crime areas are at greater risk of offending. To identify high crime areas, each census tract in Rochester was assigned a resident arrest rate reflecting the proportion of the tract's population arrested by the Rochester police in 1986.

Because the true probability of each adolescent being selected is known, the sample can be weighted to represent all seventh and eighth graders in the Rochester Public Schools. The sample is weighted in the analysis that follows (see Kish 1965:77-9).

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Table 1
Characteristics of the Base Panel and the Sample Used in This Analysis (in percentages)

Category	Base Panel	Sample Used in this Analysis
Female	27	28
Male	73	72
African American	68	69
Hispanic	17	16
White	15	15
n	1,000	870

Note: Unweighted percentages.

There are 1,000 seventh- and eighth-grade adolescents in the base sample. Attrition from Wave 1 to Wave 4 is low, resulting in a retention rate of 93 percent. Listwise deletion of cases that have missing values on key variables results in a maximum of 870 cases. Table 1 presents information about the demographic characteristics of the total panel and the 870 cases. Comparing the characteristics of the respondents used in the present study with those of the total sample indicates that attrition and listwise deletion of missing cases has not biased the sample substantially (see Krohn and Thornberry 1999, for a more complete discussion of the sample and of case attrition). Also, we have compared the prevalence of delinquency in the sample that remains in the panel at Wave 4 ($n = 928$) and in the sample that remains in the study after the listwise deletion of missing cases ($n = 870$). A total of 22 percent of the subjects who remain in the panel at Wave 4 report involvement in serious delinquency at Wave 4 compared to 21 percent of those who remain in the study after listwise deletion of cases that have missing data. We have used a Markov Chain Monte Carlo multiple-imputation procedure (Schafer 1997) to examine if the listwise deletion of cases has biased the results reported in the present article. This analysis (not shown) indicates that our results are not sensitive to the loss of cases.

Measures

Table 2 shows the mean and standard deviation of the variables used in this analysis. The third column in the table shows the waves from which the measures are taken.

Juvenile justice intervention. The RYDS contains self-reported data on involvement with the juvenile justice system for 13 offenses representing a range of delinquent behavior in terms of types and seriousness, including

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Table 2
Variable Descriptives (n = 870)

Variable	Mean	Standard Deviation	Wave
Juvenile justice intervention	.03	.16	1 and 2
Serious delinquency (sqrt)	.27	.72	2
Substance use (sqrt)	.31	1.18	2
Gang membership	.14	.35	2
Peer delinquency (ln)[a]	.29	.29	2
Gang membership	.13	.33	3
Peer delinquency (ln) [a]	.30	.31	3
Serious delinquency (1 = Yes)	.17	.38	4
Control variables			
Female	.50	.50	1
African American	.66	.48	1
Hispanic	.15	.36	1
Parents in poverty	.27	.44	1

Note: Descriptives are weighted.
a. n = 814.

violent and property offenses and drug use. Specifically, if the subjects indicated that they had committed any of these offenses, we asked them whether the police knew about it. If they indicated the police knowing, we asked them to think about the most serious time that this happened and to indicate whether they had further juvenile justice system involvement (put on probation, sent to a correctional center, referred to community service, put in detention, brought to court, or referred to a treatment program in Waves 1 and 2). Because the subjects were asked about intervention in relation to the most serious event, we only know if the subjects had been through the juvenile justice system at least once. A dummy variable, *juvenile justice intervention*, was constructed with 1 equal to some involvement with the juvenile justice system and 0 equal to no involvement.

Delinquent behavior. We use two measures of delinquent behavior, both taken from Wave 2 and Wave 4. Interviews included a self-report inventory in which information on offending over the past six months was elicited. The first measure, *serious delinquency*, consists of seven items, including robbery, gang fights, attacks with a weapon, breaking and entering, theft of $50 to $100, theft of more than $100, and car theft. The second measure, *substance use*, consists of frequency of use of alcohol and controlled substances. A square root transformation is conducted to adjust for skewness in the distribution of these variables (see Rummel 1970).[3]

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Deviant groups. Subjects were asked if they had been members of a gang during the past six months. A dummy variable measured *gang membership* at Wave 2 and at Wave 3. The variable was coded 1 if a subject reported having been a member of a gang. We also constructed a variable, *peer delinquency*, at Wave 2 and Wave 3.[4] Subjects were asked how many of their friends had engaged in various forms of delinquency, including robbery, violent attack, theft, and vandalism. The response categories ranged from 1 (*none of them*) to 4 (*most of them*). We averaged the responses to eight questions and took the natural log of the variable to adjust for skewness in the distribution (Rummel 1970).

Control variables. Gender is indicated by a dummy variable coded as 1 for female; male is the reference category (coded 0). Information about race or ethnicity was obtained in the first wave of interviews. Two dichotomous variables represent the three racial or ethnic categories—African Americans, Hispanics, and Whites—with White serving as the reference category (coded 0). Information about the income of parents was obtained directly in interviews with the primary caretakers of the subjects in the first wave (when subjects were on average 13.5 years of age). If income information was not available from Wave 1, we used data from Wave 2 or Wave 3. Parents' poverty status was measured by a dummy variable with 1 equal to families having income below the poverty level and 0 equal to parents' income being above the poverty level.

Results

Models 1 and 2 in Table 3 examine whether juvenile justice intervention affects subsequent involvement in deviant groups (path *e* in Figure 1). These results lend considerable support to the hypothesis that juvenile justice intervention is associated with increased probability of subsequent involvement in deviant networks. Model 1 examines the effects of juvenile justice intervention on subsequent gang membership. In support of our hypothesis, youths who experience juvenile justice intervention are significantly more likely to be members of a gang during the successive period relative to those who have no intervention experience. Our results indicate that this effect is substantial; in our data, juvenile justice intervention increases the odds of gang membership by a factor of 5.2. The effects of the control variables are in line with our expectations. Earlier gang membership significantly increases the odds of subsequent gang membership. Delinquent behavior and substance use have positive effects on subsequent gang membership, although

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Table 3
Logistic Regression of Indicators of Social Networks (Wave 3) on Prior Social Networks and Juvenile Justice Intervention

	Model 1 Logistic Regression of Gang Membership at Wave 3			Model 2 Ordinary Least Squares Regression of Peer Delinquency at Wave 3	
Independent Variables	Coefficient	*SE*	Odds Ratio	Coefficient	*SE*
Juvenile justice intervention W1 and W2	1.65*	.54	5.2	.24*	.06
Serious delinquency W2	.42*	.14	1.5	.01	.01
Substance use W2	.15	.08	1.2	–.01	.01
Gang membership W2	1.59*	.29	4.9	—	
Peer delinquency W2	—	—	—	.61*	.04
Control variables					
Female	–.10	.25	.91	–.03	.02
African American	2.26*	.65	9.6	.02	.02
Hispanic	1.11	.75	3.1	–.05	.03
Parents in poverty	–.11	.27	1.1	.02	.02
Deviance –2 log likelihood	655.1			—	
df	8			—	
R^2	—			.39	
n	870			814	

* $p < .05$ (two-tailed).

substance use is not significant. African Americans are more likely than others to be gang members at Wave 3, net of controls. The effects of the other control variables are insignificant.

Model 2 examines the effect of juvenile justice intervention on peer delinquency. Again, the results support our hypothesis. Juvenile justice intervention has a significant, positive effect on subsequent peer delinquency, net of controls. Also, as expected, peer delinquency at Wave 2 has significant, positive effects on peer delinquency at Wave 3. All other controls are insignificant.

Labeling theory argues that juvenile justice intervention should be positively associated with subsequent delinquency and that this effect should be mediated by involvement in delinquent groups (indirect effect *e*c* in Figure 1). Table 4 tests this hypothesis by first regressing delinquency at Wave 4 on formal criminal intervention and then adding to the equation the measure of deviant networks at Wave 3. If the coefficient for the effect of formal intervention in the first regression drops substantially in the second equation, we may take this as evidence of mediation. More specifically, the drop in the

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Table 4
Logistic Regression of Serious Delinquency at Wave 4 on Juvenile Justice Intervention and Social Networks

	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6		
Independent Variables	Coefficient	*SE*	Odds Ratio	Coefficient	*SE*	Odds Ratio	Coefficient	*SE*	Odds Ratio	Coefficient	*SE*	Odds Ratio	Coefficient	*SE*	Odds Ratio	Coefficient	*SE*	Odds Ratio
Juvenile justice intervention (W1 and W2)	1.71*	.50	5.5	1.34*	.53	3.8	1.69*	.55	5.4	1.41*	.55	4.1	1.55*	.55	4.7	.84	.58	2.3
Serious delinquency W2	.38*	.13	1.5	.28*	.14	1.3	.41*	.13	1.5	.40*	.13	1.5	.28	.15	1.3	.10	.16	1.1
Substance use W2	.22*	.07	1.3	.21*	.08	1.2	.20*	.07	1.2	.23*	.08	1.3	.19*	.07	1.2	.19*	.08	1.2
Gang membership W2	.53	.29	1.7	.02	.32	1.0	—	—	—	—	—	—	.56	.29	1.8	.11	.33	1.1
Peer delinquency W2	—	—	—	—	—	—	.82*	.37	2.3	–.02	.44	.98	.76*	.38	2.1	.48	.48	1.6
Gang membership W3	—	—	—	1.85*	.27	6.4	—	—	—	—	—	—	—	—	—	1.84*	.29	6.3
Peer delinquency W3	—	—	—	—	—	—	—	—	—	1.36*	.36	3.9	—	—	—	.86*	.40	2.4
Control variables																		
Female	–.59*	.20	.56	–.63*	.21	.53	–.68*	.21	.51	–.66*	.21	.52	–.73*	.21	.48	–.79*	.23	.45
African American	.64*	.30	1.9	.36	.31	1.4	.64*	.31	1.9	.59	.32	1.8	.62*	.31	1.9	.29	.33	1.3
Hispanic	.65	.36	1.9	.60	.37	1.8	.65	.38	1.9	.70	.39	2.0	.64	.39	1.9	.57	.40	1.8
Parents in poverty	.40	.21	1.5	.42*	.22	1.5	.46*	.21	1.6	.46*	.22	1.6	.46*	.22	1.6	.48*	.23	1.6
Deviance –2 log likelihood	709.8			662.0			657.8			643.6			654.1			595.2		
df	8			9			8			9			9			11		
n	870			870			814			814			811			811		

* $p < .05$ (two-tailed).

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effect indicates the extent to which change in deviant social networks between Wave 2 and Wave 3 mediates the effect of juvenile justice intervention on Wave 4 delinquency. We use an approximate significance test of indirect effects (Baron and Kenny 1986) to establish the statistical significance of the observed mediation effect. In Models 1 and 2 we use gang membership as the mediator variable. In Models 3 and 4 we use peer delinquency as the mediator.

In Model 1, we examine the effect of juvenile justice intervention on subsequent delinquency. As predicted, intervention is significantly, positively related to involvement in subsequent delinquency. The odds ratio indicates that experiencing juvenile justice intervention increases the odds of involvement in serious delinquency at Wave 4 by a factor of 5.5, net of all controls. The effect of gang membership at Wave 2 is positive, as expected, but slightly below the significance level. Note that gang membership at Wave 2 is included in this model so that we may interpret the effect of Wave 3 gang membership (added in Model 2) as a change effect. The effect of Wave 2 gang membership in Model 1 is net of Wave 2 serious delinquency; hence, we expected this effect to be weak. The effects of the control variables conform to expectation. Delinquency and substance use significantly increase the odds of subsequent delinquency. Females are significantly less likely to be involved in subsequent delinquency, net of controls.

In Model 2, we add the mediator variable *gang membership* at Wave 3. As predicted, adding gang membership to the equation produces a drop in the effect of juvenile justice intervention on subsequent delinquency. The coefficient drops by about 22 percent (from 1.71 to 1.34) but remains statistically significant. Moreover, as predicted, gang membership is strongly and significantly associated with subsequent delinquency. Youths who are gang members at Wave 3 are substantially more likely to report delinquent involvement at Wave 4 relative to those who are not gang members during this period. The approximate test for indirect effects shows that Wave 3 gang membership significantly mediates the effects of juvenile justice intervention on subsequent delinquency ($p < .05$, two-tailed).[5] This finding indicates that the effect of juvenile justice intervention on subsequent delinquency is mediated by the change in gang membership.

In Models 3 and 4, we use peer delinquency as the mediator. Model 3 again shows that juvenile justice intervention is strongly, positively related to subsequent delinquency, net of controls. In this model, formal criminal intervention increases the probability of subsequent delinquency by a factor of about 5.4. Model 4 shows that adding Wave 3 peer delinquency to the equation again produces a drop in the coefficient for intervention. The coefficient drops by about 17 percent and remains statistically significant. Wave 3 peer

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delinquency has a significant, positive effect on subsequent delinquency and significantly mediates part of the effect of intervention on subsequent delinquency ($p < .05$, two-tailed).[6] Again, this finding indicates that the effect of juvenile justice intervention on Wave 4 delinquency is mediated by the change in delinquent peer associations between Wave 2 and Wave 3.[7]

Models 5 and 6 examine the effects of the two mediator variables jointly. Comparing these models, the coefficient for juvenile justice intervention drops by about 46 percent when adding both the mediator variables to the model (from 1.55 to .84) and becomes insignificant. Gang membership and peer delinquency thus jointly account for a substantial proportion of the effects of juvenile justice intervention on subsequent involvement in serious delinquency.

Summary and Discussion

Recent attempts to elaborate and specify labeling theory have emphasized that deviant labeling does not have a direct influence on deviant behavior, but rather, tends to bring about conditions that are conducive to crime and delinquent behavior (Bernburg and Krohn 2003; Liska and Messner 1999; Paternoster and Iovanni 1989; Sampson and Laub 1997). Although this notion is not at all new to labeling theory (see Becker 1963), there has been limited research on such intermediary processes. The goal of this article was to examine the consequences of official deviant labeling for ties to deviant peers and subsequent deviance. We have focused on the proposition that official labeling tends to embed the individual in deviant social groups, thereby increasing the likelihood of subsequent deviance and crime (Becker 1963). Applying this argument to juvenile delinquency, we have examined the effect of juvenile justice intervention on subsequent involvement in serious delinquency and the mediator role of deviant networks. There has been limited research on this point to date (although, see Farrington 1977; Johnson et al., in press), and our study is among the few to examine this process in a clear temporal sequence.

The results lend considerable support to our hypotheses and have implications for theory and research. First, our findings lend support to the idea that official labeling triggers processes that increase involvement in deviant groups. We have shown that teenagers who experience juvenile justice intervention are substantially more likely than their peers to become members of a gang in a successive period. Also, the peer networks of these youth in a successive wave tend to become increasingly nonconventional in the sense that

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they are more likely to be involved in peer networks that have high levels of delinquency.

Second, our findings indicate that official labeling plays a significant role in the maintenance and stability of delinquency and crime at a crucial period in early and middle adolescence (see Farrington 1983; Loeber 1982; Patterson, DeBaryshe, and Ramsey 1989). Juvenile justice intervention is significantly associated with increased probability of serious delinquency in a subsequent period, while accounting for initial levels of serious delinquency and substance use and other controls. These results are consistent with the findings of prior labeling research using population samples (Bernburg and Krohn 2003; De Li 1999; Farrington 1977; Hagan and Palloni 1990; Johnson et al., in press; Palarma et al. 1986; Ray and Downs 1986; Stewart et al. 2002; Thomas and Bishop 1984), while we have attempted to improve some of this research with respect to statistical control and temporal ordering of labeling and subsequent deviance.

Finally, the present study demonstrates how labeling theory can complement established sociological approaches to crime and deviance by providing a broader viewpoint on the causes and consequences of social marginalization (also, see Bernburg and Krohn 2003; Sampson and Laub 1997).[8] Theories of differential association and social learning assume that associating with delinquent and criminal others is an important immediate cause of delinquent behavior, a proposition that has been documented extensively in criminological research (e.g., Elliott et al. 1985; Jessor and Jessor 1977; Kandel and Davies 1991; Thornberry and Krohn 1997; Warr 2002; Warr and Stafford 1991). Labeling theory broadens the viewpoint of this research, pointing out that deviant groups provide social shelter from stigma as well as providing collective rationalizations, definitions, peer pressure, and opportunities that encourage and facilitate deviant behavior (Becker 1963:38-9). The exclusionary processes triggered by deviant labeling may, in many cases, explain the individual's movement into a deviant group, as well as the isolation of deviant groups from mainstream social life. Our findings lend empirical support to this notion, showing that the effect of official labeling on subsequent delinquency is substantially mediated by an increased probability of involvement in deviant networks.

Although the findings are consistent with labeling theory, we acknowledge that they could partially be driven by changes in opportunity triggered by official intervention. Specifically, juvenile justice intervention may in some cases increase association with deviant peers by placing the individual in the company of deviant others. Future research should develop strategies to control for this alternative interpretation of official intervention effects. In our view, this effort should entail direct measurement of the proposed label-

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ing processes, including perceived and experienced rejection and stereotyping by peers and other community members (e.g., peers' parents).

We have justified our focus on the intermediary role of deviant networks on the grounds that the peer group is a crucial factor in the development of delinquency. But this is not to say that other intermediary factors emphasized by labeling theorists may not play a role in the labeling process. Theorists have recently downplayed (but not dismissed) the role of self-concept in the labeling process, emphasizing instead the consequences of deviant labeling for social ties and structured opportunities (Bernburg and Krohn 2003; Paternoster and Iovanni 1989; Sampson and Laub 1997). Thus, Paternoster and Iovanni (1989) suggest that although deviant labeling may have various consequences, including exclusion from others and an alteration of the self-concept, "secondary deviance is unlikely to occur unless actor finds the company of others who both support and exemplify the deviant status" (p. 378). Exclusion from conventional others and changes in the self-concept are thus seen to contribute to deviance maintenance insofar as these factors lead to increased association with deviant others. Similarly, Link et al. (1989) suggest that stigmatization leads to social withdrawal in part through its negative effect on self-esteem. These arguments are consistent with the processes we have suggested above (although we have not discussed the role of the self-concept specifically). But although our findings support the intermediary role of associating with deviant others, deviant-group involvement does not fully account for the observed effect of official labeling on subsequent delinquency (gang membership and peer delinquency jointly account for about 46 percent of the observed effects). Hence, the findings do not rule out that the self-concept may play an independent role in the labeling process. In this context, Heimer and Matsueda (1994) and Matsueda (1992) have provided evidence indicating that others' appraisals of adolescents as rule-violators (subjective labeling) influence subsequent delinquency through both association with deviant others and through youths' reflected appraisals of themselves as rule-violators (a deviant self-image).

The deviant label may not necessarily be a permanent status but can still have important consequences for the development of delinquency if it occurs at a critical period in the life course. Prior research indicates that official deviant labeling during adolescence may be a consequential event for the life course, pushing or leading youths on a pathway of blocked structured opportunities and delinquency in young adulthood (Bernburg and Krohn 2003; De Li 1999; Sampson and Laub 1993). The present study suggests that the effects of formal criminal labeling on peer networks during adolescence may play a substantial role in mediating the pejorative impact of official deviant labeling on the life course.

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Notes

1. This is not to say that deviant labeling only arises as a result of formal proceedings. Labeling theorists have pointed out that the sources of deviant labeling can be informal as well (see Matsueda 1992; Triplett and Jarjoura 1994).

2. The modified labeling theory of mental illness (Link 1982; Link et al. 1989) has emphasized that in addition to direct discrimination, social withdrawal of the labeled individual due to his or her expectation of rejection may play an important role in isolating labeled individuals from conventional ties and social settings.

3. A square-root transformation is often appropriate for variables that have zeros but no negative values (Rummel 1970:280-6).

4. The peer delinquency variable had a high number of missing cases, most likely because some subjects are unwilling to answer questions about or do not know about the delinquent behaviors of their friends. Therefore, in the analyses using peer delinquency, listwise deletion leaves a total number of 814 valid cases (and not 870 cases as in the other analyses). The deletion of the additional 56 cases does not at all change the demographic characteristics of the sample (see Table 1) nor the prevalence of serious delinquency at Wave 4.

5. We used the formula provided by Baron and Kenny (1986) to calculate the approximate *t* value for an indirect effect. The calculated *t* value for this indirect effect is 2.8.

6. The approximate *t* value for this indirect effect is 2.7.

7. We recognize that our measure of peer delinquency may be subject to same-reporter bias, resulting in an overestimate of the relationship between respondent's delinquency and peer delinquency because respondents are likely to project from their own delinquent behavior to the delinquent behavior of their friends (Aseltine 1995; Zhang and Messner 2000). Our measure of gang membership, on the other hand, is not threatened by a similar concern. Given that both measures of deviant groups are significantly related to delinquent behavior and mediate some of the relationship between juvenile justice intervention and delinquent behavior, we can be confidant in our interpretation of our findings.

8. This point is noteworthy in light of the history of antagonism toward the labeling approach within criminology. Scholars have pointed out that the criticisms of labeling theory during the late seventies (Hirschi 1980; Tittle 1980) were overly stringent and not justified given the lack of empirical evidence (Palarma et al. 1986; Paternoster and Iovanni 1989). These critiques were often directed against the methodological position of the labeling theorists, but rarely had substance with respect to the prospects of a labeling theory of deviance (Bernburg 2003b). Also noteworthy in this respect is Braithwaite's (1989:38) point that the labeling approach avoids what scholars have identified as the main problem associated with theoretical synthesis in criminology (Kornhauser 1978; Liska, Krohn, and Messner 1989), namely, contradictory assumptions about societal consensus.

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Jón Gunnar Bernburg is an adjunct professor at the University of Iceland and Icelandic Research Council and received his Ph.D. from the University at Albany in 2002.

Marvin D. Krohn is a professor in the School of Criminal Justice at the University at Albany–SUNY. He received his Ph.D. from Florida State University in 1974.

Craig J. Rivera is an assistant professor in the Department of Criminal Justice at Niagara University. He received his Ph.D. from the University at Albany in 2002.

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