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Jill D'Angelo and Michael P. Brown

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# Missouri Juvenile Justice Reform Act of 1995

## A Comparison of Case Outcomes for 1994 and 2000

Jill D' Angelo

*Buffalo State University, Buffalo, NY*

Michael P. Brown

*Ball State University, Muncie, IN*

This study evaluates the intended and unintended consequences of the Missouri Juvenile Justice Reform Act of 1995. Factors related to sentence outcomes are examined prior to the Act's passage and then several years after the Act was implemented. The elimination of sex and race biases were intended goals of the Act. Although the analyses reveal mixed findings, the results clearly indicate that sex and race equity was not achieved. Some evidence suggests that judges may be taking a more retributive approach since the passage of the Reform Act, for example, not placing as much emphasis on drug/alcohol use when making sentencing decisions. Alternative explanations are offered.

**Keywords:** *juvenile justice reform; policy analysis; sex bias; gender bias*

### Introduction

Although the 1960s and 1970s mark a time of substantial procedural reforms that integrated constitutional protections into juvenile justice processing, the 1990s stand out as a period of unparalleled change in the administration of juvenile justice. Nearly every state instituted legislative reforms that emphasized public safety and retributive justice (Snyder & Sickmund, 1999; Torbet et al., 1996). These changes were intended not only for the most serious, violent, and chronic juvenile offenders—that is, those of whom it is said deserve adult time when they commit adult crimes (Myers, 2003),—but also for those who have been engaged in fewer and less serious delinquent activities (Snyder, 2003). Numerous states also instituted multifaceted reforms with goals that extended beyond retribution and public safety to include varying emphases on rehabilitation and restorative justice (Mears, 2000).

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**Authors' Note:** Please address correspondence to Michael P. Brown, Department of Criminal Justice and Criminology, Ball State University, NQ255, 2000 W. University Avenue, Muncie, IN 47306; e-mail: [mbrown@bsu.edu](mailto:mbrown@bsu.edu).

The implications of these reforms are not yet fully understood (Griffin, Torbet, & Szymanski, 1998; Torbet et al., 1996). Few studies have systematically examined the extent to which reform policies have brought about intended outcomes and just as importantly, the unintended consequences of reform legislation (Dedel, 1998; Mears, 1998; Singer, 1996a). In addition, the juvenile justice reform literature is conceptually limited by its use of recidivism as a primary measure of effectiveness, and many of those studies have either assessed single-purpose (e.g., retribution) reform acts (Mears, 2000) or one dimension of a complex reform initiative (Fagan, 1996).

The Missouri Juvenile Justice Reform Act of 1995 was intended to have a twofold effect on case processing. First, it sought to eliminate racial and sex discrimination. Second, it instituted a series of retributive provisions that would make more delinquents eligible for transfer to criminal court. The focus in this study is not on those who were transferred to criminal court. Rather, we are concerned only with those who were retained within the juvenile court. But in addition to seeing if racial and sex biases were eliminated after the passage of the Reform Act, we are interested in whether an increased emphasis on retribution (i.e., transferring some juveniles to criminal court) affected judicial decisions for those who remained in the juvenile court. This study uses a quasi-experimental design to examine judicial decision making prior to the passage of the Missouri Juvenile Justice Reform Act of 1995 and then several years after the Reform Act was implemented. Logistic regression is used to ascertain whether the factors that predicted dispositions prior to the Reform Act are different from those that predicted dispositions subsequent to the Act.

This article is organized as follows. We begin with a brief description of the Missouri Juvenile Justice Reform Act of 1995 and other changes to the juvenile justice system at that time. We then provide a review of the juvenile justice policy evaluation literature. Data specifications and analyses are then presented. Finally, conclusions are offered for consideration.

## Background

Missouri is considered to be a model of reform to be followed by all state juvenile justice systems (Abrams, 2005). The Missouri Juvenile Justice Reform Act of 1995 attempted to bring about widespread change through the pursuit of two goals. First, it attempted to respond to serious and chronic delinquent acts through procedural changes. The procedural changes that came about as a result of the Act are numerous. For example, the minimum age at which one becomes eligible for transfer to criminal court was lowered from 14 to 12. The exception to this rule is if a juvenile is charged with first- or second-degree murder, first-degree assault, forcible rape, forcible sodomy, first-degree robbery, or distribution of drugs, in which case the minimum age for transfer is removed. In addition, juveniles may be transferred to criminal court if they commit two or more prior unrelated felony offenses. Furthermore,

Missouri maintains a “once adult always adult” policy and added blended sentencing to its available options. Second, it sought to address sentence discrimination. That is, the Act intended to address sentence disparities based on sex and race.

These reform efforts are consistent with a retributive philosophy that emphasizes punishment and deterrence. But there are contextual factors worth mentioning here. Missouri is considered a model for juvenile justice reform because it targets some serious offenders with punitive sanctions and yet seeks rehabilitation of others who are seen as being malleable. At about the same time that the Act was passed into law, legislators also decided to close down the state’s large juvenile correctional institutions and in their places open small facilities with a focus on treatment and rehabilitation (Abrams, 2003). Missouri’s reform efforts are generally focused on a minority of juvenile offenders: chronic and serious offenders who would either be waived to criminal court or placed in juvenile correctional facilities. But the Act’s impact goes beyond this small group when it also empowers the court to require parents or guardians to participate in activities that are consistent with the goals of the juvenile code to rehabilitate juveniles and protect society.

## Literature Review

It was only within the last two decades that interest has been shown in the systemic evaluation of juvenile justice reform. Prior to then, scant attention was paid to the intended and unintended effects of juvenile justice reforms. Juvenile justice policy analysis is a relatively new subarea of criminal justice research (Ismaili, 2006), but in an age of government accountability it is not surprising that crime policy literature is expanding. Accompanying the increase in demand for evaluation research is an increase in academic outlets for such research and the acknowledgment that there is the potential to influence policy development and improve the efficiency and effectiveness of the justice system (Ismaili, 2006).

There are essentially two broad approaches to the evaluation of juvenile justice reform. The first is an emphasis on the political and negotiated parts of juvenile justice. Bernard (1992) and Singer (1996a) exemplify this type of research. Bernard’s (1992) observations about juvenile justice reform have helped researchers conceptualize the process by which the juvenile justice system changed over time. He contends that there are three fundamental beliefs that provide insight into his reform model. First, justice officials and the public believe that delinquency is exceptionally high. Second, there is the belief that current juvenile justice policies are not only inadequately responding to delinquency but they are actually exacerbating the problem. Third, there is the belief that the juvenile justice system must be reformed to reduce delinquency.

But what explains why one reform movement is adopted more readily over another? According to Bernard (1992), the reasons why one reform movement prevails over another are found in two additional beliefs systems. These beliefs are grounded in ideas or assumptions about what causes delinquency and how best to respond to it.

Put another way, those things that are believed to be the causes of delinquency influence how society responds to delinquency. If delinquency is believed to be a selfish act committed for one's benefit, then one may be more likely to advocate for sanctions that seek to deter and punish. Conversely, if one believes that delinquency is a cry for help, a way to get attention, or a function of social forces beyond the control of the offender then one may be more likely to fashion a sentence to meet the needs of the offender.

Similarly, Singer (1996a) asserts that juvenile justice reforms are influenced by popular beliefs and attitudes. Singer contends that the New York State Juvenile Offender Act of 1978 was enacted in response to a series of highly publicized murders involving juvenile assailants. Other punitive laws were also passed at that time to target serious offenders. Singer argues that these reforms were an attempt to recriminalize delinquency. There was no compelling evidence that a punitive response to delinquency would in fact reduce violence among the young, but Singer contends that whatever type of policy becomes dominant—rehabilitation- or punishment-oriented—is a reflection of a core set of beliefs and attitudes held about adolescents by the public and government officials.

The second approach to the evaluation of juvenile justice reform reflects an attempt to be more objective and scientifically rigorous. This type of approach is in reaction to the perception that decision makers may be ill informed of the policies that have been tried in the past and why they failed to perform as expected. It is also in reaction to the assertion that many reforms are nothing but old ideas that are repackaged as something new. There are no substantive differences in what is proposed from past practices. Because much of what is proposed to respond to delinquency is not new, history repeats itself. But even systematic attempts to evaluate the effects of policy meet with unexpected methodological challenges.

Jenson and Howard (1998) looked at national trends in juvenile justice policy and delinquency through the Uniform Crime Report and found that crime rates remained relatively stable and appear to be independent of the predominant policy at the time. Jenson and Howard contend ineffective reforms lack specificity; effective reforms target specific groups of offenders that disproportionately affect the justice system. These reforms, they theorize, should seek to prevent the root causes of delinquency.

Jenson and Howard's findings may be an artifact of aggregate data. It may also reflect the complexity of state-level reform initiatives that seek multiple goals and utilize several methods to achieve those goals. As Singer (1996b, p. 10) points out, the effectiveness of a policy cannot be defined without reference to the "organizational interests and concerns" of the agency that carries out the policy. Because much of juvenile justice processing involves county-level agencies (see, e.g., Lipsey, 1992; Lipsey & Wilson, 1998), concluding that policies have had no discernable effect on delinquency may be erroneous.

Mears (1998) examined the effects of determinate sentencing at the county level in Texas. He found that there was considerable variability in the way juvenile cases were processed. Determinate sentencing appears to have clearly articulated goals: to provide for a more punitive response than what would traditionally be given to juveniles under the age of transfer and provide the opportunity for rehabilitation for those who are not appropriate for waiver. However, Mears found that there were differences in the way counties interpreted these goals and the manner in which the goals are achieved at disposition. As a consequence, the statewide policy was not uniformly applied at the county level. As one practitioner noted, "In some counties, that kid with the one marijuana cigarette is going to have the book thrown at him and be sent to TYC, [whereas] in other places . . . that kid may have nothing happen to him" (Mears, 1998, p. 454). According to Mears (1998), some of the difference in the way juvenile cases are processed can be attributed, for example, to ambiguities in the definition of punitive. He also noted that there are contextual influences that affect the implementation of a policy. For example, a jurisdiction with few rehabilitation resources may use a statute to incarcerate an offender not so much for the purpose of retribution and isolation but for the availability of rehabilitation resources at the institution.

Other research has likewise noted the importance of taking not only contextual factors into consideration when evaluating the effectiveness of juvenile justice interventions but also how individual decision makers influence policy implementation. For example, Frazier, Bishop, and Lanza-Kaduce (1999) examined transfers in Florida. The primary focus of the evaluation was on the effects of a 1994 provision to more punitively respond to serious offenders by transferring them to criminal court. There appeared to be a larger culture of punishment that influenced the passage of other legislation as well, a Juvenile Justice Reform Act that emphasized a get-tough approach to delinquency through offender punishment and accountability. Contrary to what was expected, there was no increase in the number of cases transferred to criminal court. Rather, the juvenile justice system was being used to deal with those who were eligible for transfer. An analysis of the juvenile court cases revealed that the juvenile court was actually retaining more serious cases and, in some cases, there was a movement away from a get-tough approach. The authors suggest that it is conceivable that the changes in the juvenile justice system as a result of the reforms actually changed the perceptions of practitioners about how juvenile offending might be curtailed. Gebo's (2005) research that compared juvenile court interventions with those of family courts in New Hampshire found similar results. That is, although family courts were presumed to be imposing more individualized sentences than juvenile courts, preliminary evidence suggests no differences in the interventions imposed, and reveal what appear to be an interesting combination of contextual and individual influences on those sentencing decisions.

## **This Study**

### **Research Questions**

We are interested in whether the Missouri Juvenile Justice Reform Act of 1995 had its intended effects on case processing by eliminating the influence of race and sex on sentencing. We also examine the factors related to sentencing outcomes and whether there were changes in decision making. As mentioned above, the Reform Act seeks to institute provisions that permitted the transfer of more juveniles to criminal court. Hence, we are interested in whether a retributive policy changes decision making beyond its intended purpose, resulting in changes in the factors related to sentencing decisions within the juvenile court itself.

### **Methodological and Empirical Specifications**

With the focus on the Missouri Juvenile Justice Reform Act of 1995, we obtained juvenile court data for 1994 and 2000. We selected these years so we could develop a quasi-experimental design in which cases formally processed prior to the Act's implementation could be compared with those subsequent to its implementation. The 1994 data reflected case processing during the year prior to the initial implementation of the Act. Because the Reform Act was intended to change case processing for the entire state of Missouri and the implementation of the Act was to unfold over several years, we selected the year 2000 to be sure that the Act was fully implemented.

As mentioned earlier, this study includes only those cases that were formally processed in the juvenile court. Formal sanctions involved out-of-home placements (OHPs, which include placements in Division of Youth Services, Foster Care, or a relative) and two forms of community placement, in-home placement with services (IHWS) and in-home placement without services (IHWOS). These sanctions serve as the dependent variable.

The dependent variable was recoded into a dichotomous variable and logistic regression was used as the statistical procedure. Logistic regression estimates the likelihood that an event will occur (Aldrich & Nelson, 1984). The probability of an event occurring (coded 1) is always in reference to another event (coded 0). Four comparisons are made using logistic regression: community placement (with and without services) is compared with OHP; IHWS is compared with OHP; IHWOS is compared with OHP; and finally IHWS is compared with IHWOS. Each comparison is made for 1994 and 2000 to detect whether changes occurred in sentencing after the 1995 Reform Act. The dependent variable, coding, and comparisons are presented in Table 1.

Data were obtained from the Missouri Department of Social Services. There were 11,479 cases formally processed in 1994 and 12,583 cases formally processed in 2000 (Table 1). Although there were approximately 1,000 cases more in 2000 than in 1994, the distribution of cases across the three types of sentences is similar. In

**Table 1**  
**Dependent Variable**

	1994		2000	
	<i>n</i>	%	<i>n</i>	%
Sentences				
Out-of-home placement	4,887	42.6	5,830	46.3
In-home placement with services	6,338	55.2	6,338	50.4
In-home placement without services	254	2.2	415	3.3
	11,479	100.0	12,583	100.0
Comparisons and coding				
OHP (0)	Versus	Community placement, with and without services (1)		
OHP (0)	Versus	IHWS (1)		
OHP (0)	Versus	IHWOS (1)		
IHWOS (0)	Versus	IHWS (1)		

1994, 43% of cases were OHPs. The others were sentenced to serve their sentences in the community: 55% received IHWS and 2% were sentenced to an IHWOS. In 2000, 46% of cases were OHPs, 50% received an IHWS, and 3% served IHWOSs.

### Data Sources and Participants

The independent variables and the coding scheme are found in Table 2. Race, sex, offense, and pretrial detention are dichotomously coded. Age, number of delinquent offenses, number of status offenses, number of prior delinquent and status offenses, and number of reported incidents of child abuse are intervally scaled. To assess multicollinearity in the present study, two statistical tests were performed. First, a tolerance test was used to determine the extent to which independent variables are linearly related to each other. The values produced by a tolerance test are proportions of variance not accounted for by other independent variables (Neter, Kutner, Nachtsheim, & Wasserman, 1996). When tolerance scores approach 1 it is interpreted to mean that there is a low correlation between independent variables. In the present study, the tolerance scores are considered highly satisfactory, with values ranging from .627 to .969 in the 1994 data and from .478 to .976 in the 2000 data. Second, we performed a variance inflation factor (VIF) test. VIF scores higher than 10 are considered to be an indication of multicollinearity (Neter et al., 1996). VIF scores ranged from 1.028 to 1.596 in the 1994 data and from 1.024 to 2.012 in the 2000 data. The tolerance and VIF scores suggest that multicollinearity is not a concern.

As can be seen in Table 2, for 1994 and 2000 and within each type of placement, about one half to two thirds of juveniles are white. Most are male. However, with only one exception (IHWOS), the percentage of girls increased across the different



**Table 2**  
**Independent Variables and Coding**

Variables	Coding	1994				2000			
		Total <sup>a</sup>	OHP <sup>b</sup>	IHWS <sup>c</sup>	IHWOS <sup>d</sup>	Total <sup>a</sup>	OHP <sup>b</sup>	IHWS <sup>c</sup>	IHWOS <sup>d</sup>
Race									
White	1	60.4	57.1	63.3	53.1	65.5	66.0	65.5	59.0
Nonwhite	0	39.6	42.9	36.7	46.9	34.5	34.0	34.5	41.0
Sex									
Male	1	72.8	67.5	77.4	59.4	67.4	63.0	72.3	65.2
Female	0	27.3	32.5	22.6	40.6	32.6	37.0	27.7	34.8
Age									
Mean		13.34	12.53	14.05	11.18	14.29	13.82	14.74	13.99
Offense									
Delinquent Status	1	80.3	80.9	80.1	75.6	82.0	84.0	81.5	90.1
	0	19.7	19.1	19.9	24.4	18.0	16.0	18.5	9.9
Total Delinquent									
Mean		1.05	0.85	1.23	0.38	0.88	0.60	1.16	0.65
Total Status									
Mean		0.35	0.41	0.30	0.31	0.27	0.25	0.30	0.13
Drug/Alcohol Use <sup>e</sup>									
Yes	1	88.8	90.8	86.3	95.3	88.2	90.9	85.0	92.8
No	0	11.2	9.2	13.7	4.7	11.8	9.1	15.0	7.2
Pretrial Detention									
Yes	1	25.8	30.4	22.6	15.3	23.4	22.2	25.1	13.1
No	0	74.2	69.6	77.4	84.7	76.6	77.8	74.9	86.9
Prior Delinquent									
Mean		3.75	3.55	3.98	1.67	2.76	2.55	2.89	3.68
Prior Status									
Mean		1.81	1.86	1.81	0.78	1.27	1.23	1.34	0.84
Reported Incidents of Child Abuse/ Neglect									
Mean		1.70	1.51	1.86	1.28	0.43	0.53	0.30	1.03

a. Total  $n = 11,479$  for 1994. Total  $n = 12,583$  for 2000.

b. OHP (out-of-home placement): 1994,  $n = 4,887$ ; 2000,  $n = 5,830$ .

c. IHWS (in-home placement with services): 1994,  $n = 6,338$ ; 2000,  $n = 6,338$ .

d. IHWOS (in-home placement without services): 1994,  $n = 254$ ; 2000,  $n = 415$ .

e. Data available on a total of 4,825 cases; all other cases are unknown for 1994. Data available on a total of 7,076 cases; all other cases are unknown for 2000. Percentages based on known cases.

types of placements. The average age in 1994 (13.34) is about one full year lesser than in 2000 (14.29). It is worthwhile to note that the average age in 2000 is greater across the sentences than in 1994.

Offense is the variable that shows the legal reason for which the juvenile came into contact with the juvenile court. In both 1994 and 2000, from 75% to 90% of juveniles came into contact with the court for a delinquent act. The average number

of charges associated with coming into contact with the court is found in the Total Delinquent and Total Status variables. There is considerable variability across the placements in 1994 and 2000. In 1994, for example, the average number of delinquency charges ranged from 0.38 to 1.23. In 2000, the average delinquency charges ranged from 0.60 to 1.16. On the other hand, Total Status offenses are more consistent across the placements, with a range from 0.30 to 0.41 in 1994 and 0.13 to 0.30 in 2000.

The Drug/Alcohol variable reports whether the juvenile was under the influence of drugs or alcohol at the time the offense occurred. Data suggest that the percentage of juveniles under the influence at the time of their offenses is uniformly large and fairly consistent across the years and types of placements. In 1994, 86% to 95% of the juveniles were under the influence at the time they committed the illegal act that brought them into contact with the court, whereas 85% to 93% of juveniles in 2000 were under the influence at the time they violated the law. Pretrial Detention reflects whether a juvenile was detained for the present offense. Most juveniles, across all placements, were not detained prior to adjudication. In 1994, about 26% of juveniles were detained prior to adjudication. As for differences found by placement, 30% were detained prior to an OHP, 23% prior to IHWS, and only 15% prior to IHWOS. Similarly, 23% of juveniles were detained prior to adjudication in 2000. Twenty-two percent were detained prior to an OHP, 25% prior to IHWS, and only 13% prior to IHWOS.

Measures of offense history are found in Prior Delinquent and Prior Status offenses. The average total number of prior delinquent and prior status offenses is smaller in 2000 (2.76 and 1.27, respectively) than in 1994 (3.75 and 1.81, respectively). With one exception (IHWOS), the number of prior delinquent acts is smaller in 2000 than in 1994 across the placements. The same is true for prior status offenses across the placements.

The Reported Incidents of Child Abuse/Neglect variable provides further insight into the histories of the juveniles whose cases were formally processed in 1994 and 2000. This variable reflects the average number of times for which there were formal reports that juveniles were victims of abuse or neglect. It is worth mention that the average number of abuse or neglect cases is considerably smaller in 2000 (0.43) than it was in 1994 (1.70).

## Findings

### OHP Versus Community Placement

Table 3 compares decision making for OHP with community placements (i.e., in-home placements with services and without services). The Nagelkerke pseudo- $R^2$  statistic in 1994 and 2000 are comparable. Both models explain about the same percentage of variance, 7% in 1994 and 9% in 2000. Data indicate that in both 1994 and 2000, boys ( $B = 0.355$ ,  $p < .001$  and  $B = 0.247$ ,  $p < .001$ , respectively) were more likely to be placed in the community than in an OHP. Likewise, in 1994 and 2000, whites

were more likely than nonwhites ( $B = 0.146, p < .05$  and  $B = 0.481, p < .001$ , respectively) to receive a sentence to the community.

Although a number of other factors seem to have not changed in how they influenced decision making in 1994 and 2000 (i.e., Age, Total Delinquent Offenses, Prior Delinquent and Prior Status Offenses, Reported Incidents of Child Abuse/Neglect, and Pretrial Detention), several changes are observed. For example, although Total Status Offenses ( $B = -0.184; p < .001$ ) contributed to the sentencing decision in 1994, by 2000 Total Status Offenses no longer played a part in decision making ( $B = 0.051; p > .05$ ). Although drug or alcohol abuse ( $B = -0.289; p < .01$ ) was statistically significant in 1994, it was not related to sentencing outcome in 2000 ( $B = -0.060; p > .05$ ).

Because Sex and Race were both statistically significant in 1994 and 2000, we tested to see if there was interaction between them and other significant legal variables. In Table 3 we reported only those interaction terms that were found to be statistically significant. Although only one interaction term was found to be significant in 1994, six interaction terms were significant in 2000. In 1994 Race interacted with Total Delinquent Offenses ( $B = 0.129; p < .05$ ), indicating that as delinquent offenses increased for white juveniles there was a greater likelihood of receiving community placement instead of an OHP. In 2000, Sex was found to significantly interact with Offense ( $B = -0.666; p < .001$ ), Total Delinquent Offenses ( $B = -0.399; p < .001$ ), and Child Abuse/Neglect ( $B = -0.150; p < .01$ ). The interaction terms indicate that girls with status offenses, fewer delinquent offenses, and fewer reports of abuse and neglect are more likely to receive community placements. As for Race, nonwhites with status offenses ( $B = -0.522; p < .01$ ) and nonwhites who had not been detained pretrial ( $B = -0.497; p < .01$ ) were more likely to receive community placements. And just as in 1994, whites with more delinquent offenses ( $B = 0.197; p < .05$ ) were more likely to receive community placements than OHPs.

## OHP Versus IHWS

Table 4 examines the likelihood of receiving an IHWS sentence instead of an OHP. The Nagelkerke pseudo- $R^2$  statistics for the 1994 and 2000 data indicate that the models explain about the same percentage of variance, 8% and 10%, respectively. As can be seen, sex played a part in the decision-making process in 1994 and 2000. In 1994, girls were more likely than boys to receive IHWS ( $B = -0.388; p < .001$ ). But in 2000, boys were more likely than girls to receive an IHWS sentence ( $B = 0.244; p < .001$ ). The Race of the juvenile was not a significant predictor of the sentence in 1994, but in 2000 whites ( $B = 0.517; p < .001$ ) were more likely to receive an IHWS than an OHP.

Other changes are observed in how predictor variables are related to decision making when 1994 and 2000 are compared. For example, although Race ( $B = -0.049; p > .05$ ) was not found to be related to decision making in 1994, white juveniles ( $B = 0.517; p < .001$ ) were found to be more likely to receive IHWSs than nonwhite juveniles in 2000. Similarly, Offense ( $B = 0.100; p > .05$ ) was not found to be related

**Table 3**  
**Out-of-Home Placement (0) Versus Community Placement (1)**

1994 <sup>a</sup>				2000 <sup>b</sup>			
Variable	<i>B</i>	<i>SE</i>	Log	Variable	<i>B</i>	<i>SE</i>	Log
Sex	0.355***	0.068	1.426	Sex	0.247***	0.055	1.281
Race	0.146*	0.072	1.157	Race	0.481***	0.060	1.617
Age	0.037***	0.006	1.038	Age	0.067***	0.012	1.070
Offense	-0.115	0.091	0.891	Offense	-0.362***	0.080	0.696
Total	0.097***	0.028	1.102	Total	0.484***	0.042	1.622
Delinquent Offenses				Delinquent Offenses			
Total Status Offenses	-0.184***	0.056	0.832	Total Status Offenses	0.051	0.035	1.053
Drug/Alcohol Use	-0.289**	0.100	0.749	Drug/Alcohol Use	-0.060	0.084	0.941
Pretrial Detention	-0.693***	0.080	0.500	Pretrial Detention	-0.587***	0.072	0.556
Prior Delinquent Offenses	-0.048***	0.012	0.953	Prior Delinquent Offenses	-0.021**	0.007	0.979
Prior Status Offenses	-0.001	0.012	0.999	Prior Status Offenses	-0.016	0.011	0.984
History of Reported Child Abuse/Neglect	-0.183***	0.034	0.833	History of Reported Child Abuse/Neglect	-0.107***	0.028	0.898
Significant interaction				Significant interactions			
Race × Total Delinquent Offenses	0.129*	0.066	1.138	Sex × Offense	-0.666***	0.179	0.514
				Sex × Total Delinquent Offense	-0.399***	0.100	0.673
				Sex × History of Reported Child Abuse/Neglect	-0.150**	0.056	0.860
				Race × Offense	-0.533**	0.203	0.587
				Race × Total Delinquent Offense	0.197*	0.090	1.218
				Race × Pretrial Detention	-0.497**	0.183	0.068
Constant	-0.108	0.187		Constant	-1.399***	0.230	
Chi-square	265.591***	11 <i>df</i>		Chi-square	455.346***	11 <i>df</i>	
-2 Likelihood		6,397.414		-2 Likelihood		8,971.030	
Nagelkerke pseudo- <i>R</i> <sup>2</sup> = .07				Nagelkerke pseudo- <i>R</i> <sup>2</sup> = .09			

a. Out-of-home placement, *n* = 4,879; community placement, *n* = 6,590.

b. Out-of-home placement, *n* = 5,593; community placement, *n* = 6,602.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

to sentencing in 1994. However, in 2000, status offenders ( $B = -0.422$ ;  $p < .001$ ) were more likely to receive IHWSs. Conversely, Total Status Offenses and Drug/Alcohol Use contributed to decision making in 1994 but not in 2000.

The analysis also revealed that although younger juveniles in 1994 had a greater likelihood of being placed in IHWSs ( $B = -0.042$ ;  $p < .001$ ), in 2000 older juveniles ( $B = 0.057$ ;  $p < .001$ ) were more likely to receive IHWSs. A change was also observed in the Total Delinquent Offenses variable. In 1994, the smaller the number of delinquency offenses ( $B = -0.122$ ;  $p < .001$ ), the greater was the likelihood of an IHWS sentence. But in 2000, the larger the number of delinquency offenses ( $B = 0.542$ ;  $p < .001$ ), the greater was the likelihood of an IHWS sentence.

Interestingly, having been detained prior to adjudication in 1994 ( $B = 0.718$ ;  $p < .001$ ) was related to receiving an IHWS sentence. However, in 2000, the opposite was found. Juveniles who had not been detained pretrial ( $B = -0.560$ ;  $p < .001$ ) were more likely to be placed in the community with services. In 1994, the larger the number of prior delinquent offenses ( $B = 0.046$ ;  $p < .001$ ), the greater was the likelihood of an IHWS sentence. In 2000, however, the influence of prior delinquency had the opposite effect on decision making. The smaller the number of prior delinquent offenses ( $B = -0.019$ ;  $p < .01$ ), the greater was the likelihood of an IHWS sentence. Prior Status Offenses did not play a part in decision making in 1994 and 2000. Finally, in 1994, as the number of reported child abuse and neglect cases increased ( $B = 0.196$ ;  $p < .001$ ), juveniles were more likely to receive an IHWS than an OHP. But in 2000, the fewer the number of reported abuse and neglect cases ( $B = -0.206$ ;  $p < .001$ ), the greater was the likelihood of receiving an IHWS.

Although Sex was found to be a predictor of sentence outcome in 1994, it did not interact significantly with any of the legal variables. Both Sex and Race played a part in the decision-making process in 2000, and both interacted with a number of variables. Both Sex ( $B = -0.693$ ;  $p < .001$ ) and Race ( $B = -0.578$ ;  $p < .001$ ) interacted with Offense. That is, girls with status offenses and nonwhite juveniles with status offenses are more likely to receive IHWS sentences. Similarly, both Sex ( $B = -0.449$ ;  $p < .001$ ) and Race ( $B = 0.207$ ;  $p < .05$ ) interacted with Total Delinquent Offenses. Girls with fewer delinquent offenses and whites with more delinquent offenses are more likely to receive IHWSs. Also, girls with fewer reported cases of abuse and neglect ( $B = -0.125$ ;  $p < .05$ ) and nonwhites who had not served pretrial detention ( $B = -0.504$ ;  $p < .01$ ) were more likely to receive IHWS sentences.

## OHP Versus IHWOS

Table 5 compares decision-making processes for those who received OHP with those who were sentenced to IHWOS. The Nagelkerke pseudo- $R^2$  statistics indicate that the 1994 model explains 12% of the variance and the 2000 model explains 11% of the variance. The Sex of the juvenile did not play a part in the decision-making process in 1994 or in 2000. Race was found to be statistically significant in 1994,

**Table 4**  
**Out-of-Home Placement (0) Versus In-Home Placement With Services (1)**

1994 <sup>a</sup>				2000 <sup>b</sup>			
Variable	<i>B</i>	<i>SE</i>	Log	Variable	<i>B</i>	<i>SE</i>	Log
Sex	-0.388***	0.070	0.678	Sex	0.244***	0.057	1.277
Race	-0.049	0.074	0.952	Race	0.517***	0.061	1.677
Age	-0.042***	0.006	0.959	Age	0.057***	0.012	1.059
Offense	0.100	0.092	1.106	Offense	0.422***	0.082	0.655
Total	-0.122***	0.029	0.886	Total	0.542***	0.043	1.720
Delinquent Offenses				Delinquent Offenses			
Total Status Offenses	0.158**	0.055	1.171	Total Status Offenses	0.062	0.038	1.064
Drug/Alcohol Use	0.315**	0.101	1.370	Drug/Alcohol Use	-0.051	0.085	0.951
Pretrial Detention	0.718***	0.081	2.051	Pretrial Detention	-0.560***	0.073	0.571
Prior Delinquent Offenses	0.046***	0.012	1.047	Prior Delinquent Offenses	-0.019**	0.007	0.981
Prior Status Offenses	-0.004	0.012	0.996	Prior Status Offenses	-0.011	0.011	0.989
History of Reported Child Abuse/Neglect	0.196***	0.035	1.988	History of Reported Child Abuse/Neglect	-0.206***	0.031	0.831
				Significant interactions			
				Sex × Offense	-0.693***	0.181	0.500
				Sex × Total Delinquent Offense	-0.449***	0.102	0.638
				Sex × History of Reported Child Abuse/Neglect	-0.125*	0.062	0.882
				Race × Offense	-0.578**	0.207	0.561
				Race × Total Delinquent Offense	0.207*	0.093	1.230
				Race × Pretrial Detention	-0.504**	0.185	0.604
Constant	0.179	0.190		Constant	-1.346***	0.237	
Chi-square	295.196***	11 <i>df</i>		Chi-square	530.906***	11 <i>df</i>	
-2 Likelihood		6,120.637		-2 Likelihood		8,620.236	
Nagelkerke pseudo- <i>R</i> <sup>2</sup>	= .08			Nagelkerke pseudo- <i>R</i> <sup>2</sup>	= .10		

a. Out-of-home placement, *n* = 6,336; in-home placement with services, *n* = 4,879.

b. Out-of-home placement, *n* = 6,272; in-home placement with services, *n* = 5,593.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

with nonwhites ( $B = 1.092$ ;  $p < .001$ ) more likely to receive IHWOSs. In 2000, however, Race ( $B = 0.226$ ;  $p > .05$ ) was not an important contributor to the decision-making process.

The influences of Offense, Total Status Offenses, Prior Delinquent Offenses, and Prior Status Offenses on decision making did not change from 1994 to 2000. Offense did not play a part in decision making in either year, and neither did Prior Delinquent Offenses and Prior Status Offenses. The influence of Total Status Offenses was consistent in 1994 and 2000 ( $B = -0.945$ ,  $p < .01$  and  $B = -0.862$ ,  $p < .05$ , respectively), with IHWOS related to fewer status offenses.

Although the age ( $B = 0.005$ ;  $p > .05$ ) of the juvenile did not influence sentence outcome in 1994, it was an important predictor in 2000. The older the juvenile ( $B = 0.148$ ;  $p < .001$ ), the greater was the likelihood of IHWOS. The same pattern was observed with the influence of drug or alcohol use. In 1994, drug or alcohol use ( $B = 0.057$ ;  $p > .05$ ) at the time of the offense did not predict sentence outcome. In 2000, however, those with drug or alcohol use ( $B = -0.595$ ;  $p < .05$ ) were more likely to receive IHWOSs. Child Abuse/Neglect did not influence decision making in 1994 ( $B = -0.076$ ;  $p > .05$ ), but in 2000 as the number of reported abuse and neglect cases increased ( $B = 0.440$ ;  $p < .001$ ) so did the likelihood of IHWOSs. Conversely, in 1994, although Total Delinquent Offenses ( $B = -0.609$ ;  $p < .01$ ) influenced the decision to sentence juveniles to IHWOSs, in 2000 this predictor was no longer influential ( $B = -0.448$ ;  $p > .05$ ) in the decision-making process.

The only statistically significant interaction term was found in the 1994 data between Race and Total Delinquent Offenses. This interaction term indicates that nonwhite juveniles with fewer delinquent offenses were more likely to receive an IHWOS than an OHP.

## IHWOS Versus IHWS

Table 6 compares the likelihood of receiving an IHWS sentence instead of an IHWOS. The Nagelkerke pseudo- $R^2$  statistics for the 1994 and 2000 data indicate that the models explain about the same percentage of variance, 22% and 23%, respectively. As can be seen, Sex played no part in decision making in 1994 ( $B = 0.037$ ;  $p > .05$ ) and 2000 ( $B = -0.140$ ;  $p > .05$ ). Race, on the other hand, influenced sentencing in 1994 ( $B = -0.568$ ;  $p < .001$ ), with nonwhites more likely than whites to be sentenced to IHWS. However, in 2000, whites were more likely than nonwhites to be sentenced to IHWS ( $B = 0.579$ ;  $p < .01$ ).

Offense and Prior Delinquent Offenses are not related to IHWS sentences in either 1994 or 2000. Total Delinquent Offenses, Total Status Offenses, and Pretrial Detention were all related to receiving IHWS sentences. In both 1994 and 2000, the larger the number of delinquent offenses ( $B = 2.129$ ,  $p < .001$  and  $B = 1.771$ ,  $p < .001$ , respectively) the greater the likelihood of an IHWS. The same is true with Total Status Offenses. In both years (in 1994,  $B = 1.091$ ,  $p < .001$  and in 2000  $B = 1.018$ ,  $p < .01$ ), the larger the number of status offenses, the greater the likelihood of receiving

**Table 5**  
**Out-of-Home Placement (0) Versus In-home Placement Without Services (1)**

1994 <sup>a</sup>				2000 <sup>b</sup>			
Variable	<i>B</i>	<i>SE</i>	Log	Variable	<i>B</i>	<i>SE</i>	Log
Sex	0.006	0.167	1.006	Sex	0.193	0.173	1.213
Race	1.092***	0.164	2.983	Race	0.226	0.162	1.253
Age	0.005	0.014	1.005	Age	0.148***	0.034	1.160
Offense	-0.671	0.362	0.511	Offense	-0.448	0.406	0.639
Total	-0.609**	0.181	0.544	Total	-0.292	0.159	0.747
Delinquent Offenses				Delinquent Offenses			
Total Status	-0.945**	0.311	0.389	Total Status	-0.862*	0.356	0.422
Offenses				Offenses			
Drug/Alcohol Use	0.057	0.388	1.059	Drug/Alcohol Use	-0.595*	0.287	0.552
Pretrial Detention	-0.186	0.251	0.830	Pretrial Detention	-1.576***	0.398	0.207
Prior	-0.067	0.050	0.935	Prior	-0.009	0.027	0.991
Delinquent Offenses				Delinquent Offenses			
Prior Status	-0.146	0.070	0.864	Prior Status	-0.097	0.052	0.908
Offenses				Offenses			
History of Reported Child Abuse	-0.076	0.080	0.926	History of Reported Child Abuse	0.440***	0.050	1.553
Significant interaction							
Race × Total Delinquent Offenses	-1.086**	0.357	0.337				
Constant	-2.705***	0.611		Constant	-4.156***	0.747	
Chi-square	126.708	11 <i>df</i>		Chi-square	142.883***	11 <i>df</i>	
-2 Likelihood		1,209.591		-2 Likelihood		1,389.850	
Nagelkerke pseudo- <i>R</i> <sup>2</sup> = .12				Nagelkerke pseudo- <i>R</i> <sup>2</sup> = .11			

a. Out-of-home placement,  $n = 4,879$ ; in-home placement without services,  $n = 254$ .

b. Out-of-home placement,  $n = 5,593$ ; in-home placement without services,  $n = 330$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

an IHWS sentence. The role played by Pretrial Detention in the decision-making process changed from 1994 to 2000. In 1994, those who were not detained pretrial ( $B = -0.733$ ;  $p < .01$ ) were more likely to receive IHWSs, but in 2000 it was those with pretrial detention ( $B = 0.792$ ;  $p < .05$ ) who were more likely to be sentenced to an IHWS.

Age was not related to sentencing in 1994 ( $B = -0.015$ ;  $p > .05$ ), but the 2000 data indicate that the younger the juvenile the greater was the likelihood of receiving IHWS sentences ( $B = -0.144$ ;  $p < .001$ ). Likewise, drug or alcohol use was not related to receiving an IHWS sentence in 1994 ( $B = -0.180$ ;  $p > .05$ ) but in 2000 drug or alcohol use increased the likelihood of an IHWS ( $B = 0.784$ ;  $p < .01$ ). The same



**Table 6**  
**In-Home Placement Without Services (0) Versus**  
**In-home Placement With Services (1)**

1994 <sup>a</sup>				2000 <sup>b</sup>			
Variable	<i>B</i>	<i>SE</i>	Log	Variable	<i>B</i>	<i>SE</i>	Log
Sex	0.037	0.172	1.037	Sex	-0.140	0.172	0.870
Race	-0.568***	0.165	0.567	Race	0.579**	0.183	1.785
Age	-0.015	0.016	0.985	Age	-0.144***	0.036	0.866
Offense	0.162	0.359	1.175	Offense	-0.534	0.400	0.586
Total	2.129***	0.248	8.403	Total	1.771***	0.214	5.879
Delinquent Offenses				Delinquent Offenses			
Total Status Offenses	1.091***	0.335	2.978	Total Status Offenses	1.018**	0.355	2.768
Drug/Alcohol Use	-0.180	0.381	0.835	Drug/Alcohol Use	0.784**	0.282	2.190
Pretrial Detention	-0.733**	0.249	0.480	Pretrial Detention	0.792*	0.383	2.207
Prior Delinquent Offenses	0.061	0.052	1.016	Prior Delinquent Offenses	-0.023	0.025	0.978
Prior Status Offenses	0.123*	0.061	1.131	Prior Status Offenses	0.079	0.050	1.082
History of Reported Child Abuse	-0.094	0.076	0.911	History of Reported Child Abuse	-0.580***	0.063	0.560
Significant interaction				Significant interaction			
Race × Total Delinquent Offenses	1.372***	0.383	3.945	Race × Drug/Alcohol Use	1.005***	0.238	2.731
Constant	2.161***	0.592		Constant	3.132***	0.756	
Chi-square	245.578	11 <i>df</i>		Chi-square	300.583***	11 <i>df</i>	
-2 Likelihood		1,108.392		-2 Likelihood		1,221.847	
Nagelkerke pseudo- <i>R</i> <sup>2</sup> = .22				Nagelkerke pseudo- <i>R</i> <sup>2</sup> = .23			

a. In-home placement without services, *n* = 254; In-home placement with services, *n* = 6,336.

b. In-home placement without services, *n* = 320; In-home placement with services, *n* = 6,272.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

pattern is observed with the Reported Child Abuse/Neglect variable. A history of abuse and neglect did not influence decision making in 1994 ( $B = -0.094$ ;  $p > .05$ ), but in 2000 the smaller the number of reported abuse and neglect cases ( $B = -0.580$ ;  $p < .05$ ) the greater the likelihood of being sentenced to an IHWS. The opposite is found with regard to the influence of Prior Status Offenses on decision making. In 1994, the more Prior Status Offenses ( $B = 0.123$ ;  $p < .05$ ) the greater the likelihood of an IHWS. In 2000, however, Prior Status Offenses did not influence decision making ( $B = 0.079$ ;  $p > .05$ ).

Two interaction terms were found to be significant. In 1994, the interaction between Race and Total Delinquent Offenses indicates that as the number of delinquent offenses increased for white juveniles ( $B = 1.372$ ;  $p < .001$ ), the greater was the likelihood of receiving an IHWS. In 2000, a significant relationship was found between Race and Drug/Alcohol Use. That interaction term indicated that white juveniles who had used drugs or alcohol at the time they had committed the Offense for which they were taken into custody were more likely to receive an IHWS.

## Discussion

The Missouri Juvenile Justice Reform Act of 1995 was intended to eliminate sex and race biases in sentencing decisions. We found that Sex was an important predictor in sentencing when OHP was compared with Community Placements (with [IHWS] and without [IHWOS] services) and when OHP was compared with IHWS. That is, boys were more likely to receive a community placement in both 1994 and 2000. However, although girls were more likely to receive IHWS sentences in 1994, boys were more likely to receive IHWS sentences in 2000. Sex was not an important predictor of sentence outcomes when OHP was compared with IHWOS sentences or when IHWOS was compared with IHWS sentences.

Like sex, race frequently continued to play a part in juvenile sentencing. For example, when comparing OHP with IHWS and IHWOS, white juveniles were more likely than nonwhite juveniles to receive a community sentence in 1994 and in 2000. In addition, although race did not play a part in decision making in 1994 when deciding between OHP and IHWS, in 2000, after the passage of the Reform Act, whites were more likely than nonwhites to be placed in their homes with services (IHWS). Comparing OHP with IHWOS, whites were more likely than nonwhites to receive an IHWOS sentence in 1994; in 2000, race no longer played a part in the sentencing decision. Comparing IHWOS with IHWS, nonwhites were more likely than whites to receive IHWS sentences in 1994, and in 2000 whites were more likely than nonwhites to receive IHWS sentences.

These findings indicate that Sex and Race biases were not eliminated from sentencing decisions as a result of the Missouri Juvenile Justice Reform Act of 1995. In fact, there is some evidence that these biases became more prevalent under certain conditions. This is especially evident when considering interaction terms. The data strongly indicate that when making sentencing decisions, especially when deciding between OHP and community placements or OHP and IHWS, Sex and Race interact with several legal variables.

We suspect that the extent to which Sex and Race interact with legal variables when deciding between OHP and community placement or OHP and IHWS has to do with the difficulties associated with the classic in–out decision. Should such persons be incapacitated? Should they be removed from their home and placed elsewhere?

Do they pose a risk to the community? To themselves? Can they be effectively supervised in the community? Unnever and Hembroff (1988) found that when legal variables do not clearly indicate the appropriate sentence, judges sometimes turn to extralegal characteristics (e.g., race, ethnicity, and sex) of the offender. Future research is needed to better understand these relationships.

It is worth mention that substance use is taken less into consideration in 2000 than it was in 1994. This may be an indication that Missouri's juvenile justice system has become more retributive since the passage of the Reform Act, but it may also be that judges consider drug abuse and dependency issues pervasive problems and something that will be assessed after the sentence is imposed. In addition, data tend to indicate that since 2000 decision makers are intervening earlier in cases involving child abuse and neglect. This seems to be consistent with greater social sensitivity to child abuse and neglect issues.

We cannot show definitively that the Missouri Juvenile Justice Reform Act of 1995 was the only influence on sentencing decisions. There were a number of changes taking place at the same time that the Reform Act was passed into legislation that may have influenced our findings. The closing of large juvenile institutions and the opening of smaller facilities with the aim of providing better rehabilitation programming is just one, albeit potentially powerful, indicator of fundamental philosophical changes that may have influenced how the policy was implemented and decisions were made.

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**Jill D'Angelo** is an assistant professor at Buffalo State College in the Department of Criminal Justice. Her research interests include juvenile justice, corrections, and women in prison.

**Michael P. Brown** is an associate professor of Criminal Justice and Criminology at Ball State University. His research interests are in the areas of juvenile justice, community corrections, and education.