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The Effects of Rape Law Reform on Rape Case Processing

Stacy Futter† and Walter R. Mebane, Jr.††

I. INTRODUCTION

The 1960s and 1970s were accompanied by a wave of feminist advocacy that challenged many discourses and institutions in the United States. One of the primary areas in which feminists sought reform was rape laws.¹ Women’s groups across the country launched grass-roots campaigns, lobbying state legislatures for rape law reforms.² The lobbying led

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2. Julie Homey & Cassia Spohn, Rape Law Reform and Instrumental Change in Six Urban Jurisdictions, 25 LAW & SOC’Y REV. 117, 118 (1991). This paper does not attempt to address the complexities of the different coalitions of groups that pursued rape law reform in each state. While the National Organization for Women (NOW) was extremely active in the anti-rape movement in the 1970s, most of the lobbying efforts took place on the state level. MARIA BAYACQUA, RAPE ON THE PUBLIC AGENDA 88-102 (2000). In 1973, NOW formed a National Rape Task Force, which served mainly as a clearinghouse for data rather than as a direct organizing influence at the state level. Id. at 97. NOW encouraged the formation of state-level rape task forces to lobby for rape law reform since rape laws are part of each state’s penal code. Id. The composition of the
to reforms of rape laws in every state by the mid-1980s. Rape law reform was intended to have both symbolic and instrumental impacts. Symbolically, reforms were intended to reflect women’s autonomy in American society and to encourage respect for their diverse roles and behavior. Instrumental goals included “increasing the reporting of rape and enhancing prosecution and conviction in rape cases; . . . improving the treatment of rape victims in the criminal justice system; . . . prohibiting a wider range of coercive sexual conduct; and . . . expanding the range of persons protected by law.”

In this study, we examine different aspects of rape law reform in each state and the District of Columbia from 1970-1992. Our goal is to understand the complexity of rape law reform and to test whether reforms have affected two aspects of case processing: the number of reports of forcible rape that police believe are well-founded (“actual rapes”) and the consequent number of arrests (“clearances”). Thirty years have passed since rape law reform began, and much controversy about the success of the reforms still exists. While rape law reform has continued in the direction favored by most advocates since 1970, the effects of reform on the criminal prosecution of sexual crimes have not been comprehensively studied previously. Until recently, most studies focused on one state for a period of no longer than three years after the reform. Prior to this study, no study had examined the impacts of particular reforms across states; the most comprehensive study simply compared jurisdictions (cities) that had generally strong reforms with ones that had generally weak reforms.

The results of our study strongly suggest that implementation of more liberal and feminist-oriented legal provisions during the years 1970-1991 did, for the most part, increase the number of rape reports that po-

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3. Horney & Spohn, supra note 2, at 118.
4. See Berger et al., supra note 1, at 329-31.
6. Ideally, a study evaluating the impacts of rape law reform would examine the reforms’ effects not only on “actual rapes” and “clearances,” but also on other aspects of rape case processing, including prosecutions, convictions, and sentencing. The available data, however, prohibit us from studying those aspects of case processing. Studies that have measured the impact of reforms on prosecutions, convictions, and sentencing have been limited to evaluating a few counties or cities because the researchers needed to conduct field research, interview prosecutors, read transcripts, and examine courthouse records. See, e.g., Susan Caringella-MacDonald, Sexual Assault Prosecution: An Examination of Model Rape Legislation in Michigan, 4 WOMEN & POL., 65, 68-69 (1984) (studying rape case processing in Kalamazoo County, Michigan); Horney & Spohn, supra note 2 (studying the prosecuting of rape cases in six urban jurisdictions: Detroit, Chicago, Philadelphia, Atlanta, Houston, and Washington, D.C.).
8. See Horney & Spohn, supra note 2, at 122.
lice agencies deemed well-founded. In particular, the following rape law reforms significantly increased the number of "actual rapes": defining sex crimes in terms of a single continuum, subjecting spouses and cohabitants to prosecution, limiting the admissibility at trial of the victim's past sexual history with the defendant, limiting the admissibility of the victim's past sexual history with persons other than the defendant, and denying a mistake of incapacity defense. The increases in the number of "actual rapes" that resulted from those reforms also carried through to increases in the number of "clearances."

II. RAPE LAW REFORM


The traditional common law definition of rape is "unlawful carnal knowledge of a woman by force and against her will." The common law definition of rape was prevalent throughout the United States until the mid-1950s and remained the law of many states through the mid-1970s. Under the common law definition, in order for a sexual assault to be considered rape, there had to have been "forcible penetration of the vagina by the penis, however slight." Rape only included assaults by a male perpetrator on a female victim and exempted a husband from being charged with a crime against his wife. This definition was used by Sir

9. In this paper, for the sake of consistency and readability, we label the provisions sought by the reform effort as "feminist" or "liberal" interchangeably. We understand that the reform effort was not entirely unified and that feminists disagreed and still disagree as to how rape laws should be reformed and whether women's groups should seek reform at all. For example, different feminist groups disagreed on the appropriate penalties for rape. While some groups favored the reduction of sentences associated with rape under the theory that it would lead to more convictions, other groups were adamantly opposed to reducing the penalties. See Berger et al., supra note 1, at 333. Different feminist groups also disagree about whether rape statutes should use the word "rape" or whether it should be replaced with "criminal sexual conduct" or "sexual assault." See id. at 331; see also discussion infra Section III.A regarding the symbolic importance of the change in terminology. Some of the more radical feminist groups, such as the Feminist Alliance Against Rape, denounced any efforts by women's groups to reform rape laws, because they disapproved of working within a system that perpetuates oppression and injustice. See Bevacqua, supra note 2, at 120. By the use of the terms "feminists" or "women's groups," we do not intend to mask the fact that there is a continuum of feminism and that no one phrase can capture the beliefs and goals of all persons who consider themselves feminists or activists for women's causes.


11. Id.

12. Id.; see Spohn & Horney, supra note 7, at 20.


14. Id. at 380-82.
Matthew Hale in 1847, and until 1977 generally was accepted by courts and commentators in the United States. Because rape traditionally was seen as a crime of theft of a man's property (either a husband's or a father's), the sentences for men convicted of rape under common law were severe, typically the death penalty or life imprisonment.

Traditional rape law centered around the woman's consent. It required the victim to prove that her resistance was truly overcome and that the rape really occurred "against her will." In many cases a victim had to prove that she "resisted to the utmost" before she was raped. During trial, a woman's previous sexual history and encounters with the accused and third parties were used in court to determine whether the victim had a "tendency to consent." An unchaste woman could not be raped under traditional rape law, and a man who engaged in forcible sex with her was not held culpable.

Women's groups attacked four aspects of the traditional common law definition of rape. First, they argued that the definition was too narrow and should include sexual assaults other than vaginal-penile penetration. They also believed that rape laws should protect male victims and include several degrees of offense. Second, they objected to the requirement of proof of nonconsent. Third, several groups objected to the use of evidence of a victim's reputation. Lastly, various groups argued against the conventional death sentence assigned to rape, because it deterred juries from handing down guilty verdicts and because they thought that sentences should be graded commensurate with the degree of the rape (i.e., higher if aggravated circumstances were present).

The Model Penal Code (MPC) of 1962 sought to move away from the traditional common law approach to rape. Written by the Ameri-
can Law Institute (ALI), the MPC attempted to change the definition of rape and its standard of resistance. Although some states followed the ALI’s example and changed their codes, the model law was not adopted by the legislatures in every state. In many ways, however, the MPC was not as significant a departure from traditional law as reformers had hoped. First, the definition of “rape” was not significantly broadened. The MPC continued to define the crime of rape in terms of penile penetration of the vagina. While reforms did allow spousal prosecution for lesser offenses of sexual assault and for rape if the couple was living separately and had filed for divorce, a husband still could not “rape” his wife. Second, resistance still remained at the core of the MPC. Although the MPC removed “against her will” from the definition of rape, it included a requirement that the perpetrator had “compelled her to submit,” which ensured that the woman would have to offer more than a “token initial resistance” when attacked to prove that she was raped. The MPC also retained a corroboration requirement based on Sir Hale’s distrust of the vengeful and lying female, and it required “fresh complaints” (made less than three months after the attack) as a prerequisite to filing a complaint. Third, the MPC did not limit the use by the defense of a victim’s past sexual history as evidence in trial for rape. Therefore, the

(1) Rape. A male who has sexual intercourse with a female not his wife is guilty of rape if:
(a) he compels her to submit by force or by threat of imminent death, serious bodily injury, extreme pain or kidnapping, to be inflicted on anyone; or
(b) he has substantially impaired her power to appraise or control her conduct by administering or employing without her knowledge drugs, intoxicants or other means for the purpose of preventing resistance; or
(c) the female is unconscious; or
(d) the female is less than 10 years old.
Rape is a felony of the second degree unless (i) in the course thereof the actor inflicts serious bodily injury upon anyone, or (ii) the victim was not a voluntary social companion of the actor upon the occasion of the crime and had not previously permitted him sexual liberties, in which cases the offense is a felony of the first degree.

(2) Gross Sexual Imposition. A male who has sexual intercourse with a female not his wife commits a felony of the third degree if:
(a) he compels her to submit by any threat that would prevent resistance by a woman of ordinary resolution; or
(b) he knows that she suffers from a mental disease or defect which renders her incapable of appraising the nature of her conduct; or
(c) he knows that she is unaware that a sexual act is being committed upon her or that she submits because she mistakenly supposes that he is her husband.

29. See Battelle Institute, supra note 10, at 5-6.
30. Id.
32. MODEL PENAL CODE § 213.6 (Official Draft 1962).
34. Battelle Institute, supra note 10, at 6; MODEL PENAL CODE § 213.16(1)(a) (Official Draft 1962).
36. The MPC explicitly allowed the defendant “to prove by a preponderance of the evidence that the alleged victim had, prior to the time of the offense charged, engaged promiscuously in sexual relations with others” as a defense to prosecution for the crimes like corruption of a minor and certain sexual assaults involving minors. MODEL PENAL CODE § 213.6(34) (Official Draft 1962).
MPC did not answer many of the objections to traditional rape law. These deficiencies forced many women’s groups to seek reform beyond the ALI’s recommendations.37

B. Post-1970: The Current Approach(es) to Rape Law Reform

In the 1970s, reformers focused on four primary areas: the definition of the offense, evidentiary rules, the statutory age of consent, and the penalty structure. This reform agenda was well-received at the time due to increased public concern with crime and victims’ rights.38 In each state, women’s groups formed alliances with anti-crime groups to get reforms passed.39 Feminist groups were motivated by an ideology that focused on symbolic changes that would affect societal perceptions of rape.40 “Law and order” groups urged practical instrumental goals. While the motivations behind the feminist groups’ and anti-crime groups’ efforts differed, the effects of both types of changes they sought were intended to be complementary.41 Because the composition of the alliances

37. Estrich, supra note 19, at 57-79.
38. Kadish, supra note 31, at 976. In the 1970s, the United States government placed renewed emphasis on fighting crime. See Bevacqua, supra note 2, at 116. By the late 1960s, President Lyndon Johnson had announced a “goal of ‘not only reducing but banishing’ crime altogether.” Id. at 117. By the 1970s, President Nixon had proclaimed a “national attack” on crime, urging the country to “show that the day of the criminal is past in America, and the day of the citizen is here.” Id. at 117-18.
40. Id. at 554-55. See also Carol Tavris, The Mismeasure of Woman 106, 112-13 (1992) (recognizing generally that law ‘reflected male experiences rather than female experiences: “[M]odern jurisprudence . . . is masculine rather than human: the values, dangers, fears, and other real-life experiences of women’s lives are not . . . ‘reflected at any level whatsoever in contracts, torts, constitutional law, or any other field of legal doctrine’’); Berger et al., supra note 1, at 329-31 (explaining that feminists tried to change the law because they saw it as a powerful force in society that could encourage respect for the autonomous roles and behavior of women in modern society).
41. Bachman & Paternoster, supra note 39, at 555. While women’s groups and anti-crime groups both saw the law as one mechanism for combating rape, they did not agree on the relative importance of the reforms. Ronald J. Berger, et al., The Social and Political Context of Rape Law Reform: An Aggregate Analysis, 72 SOC. SCI. Q. 221, 223-24 (1991). For example, the anti-crime groups were less concerned with “women’s issues.” Their main goal was to increase the deterrent and punitive capabilities of the law. Their chosen methods to achieve that goal were creating clearer guidelines and making the system more efficient and rational and less arbitrary. Id. at 223. Consequently, the anti-crime groups favored reforms such as making rape laws gender neutral and creating a single continuum of offenses with a degree structure. They were less inclined to support reforms to allow spouses to be prosecuted, because they feared that would invite false claims. They were also less inclined to support criminalizing nonconsensual sexual contacts, because they were concerned that removing the force requirement would lead to false reports. Id. at 224. By contrast, removing both the spousal exemption and the force requirement were centerpieces of the women’s rape law reform movement, which was aimed at removing societal sexism and rape myth stereotypes. See Tavris, supra note 40, at 112-13. Because the two groups had different goals, some commentators have argued that the groups were only “marginally compatible.” See Bevacqua, supra note 2, at 121 (referring to an article in The Nation in which journalist Daniel Ben-Horin questioned the benefits of feminist groups’ alliances with conservative legislators who were reforming rape laws not to protect the autonomy of women or to debunk cultural myths about men and women, but, within the traditional framework, to “protect [their] women”).
varied from state to state, so did the laws that were passed. As a result, the finished reforms represent compromises rather than clear reflections of feminist ideals.42

III. TYPES OF REFORM

A. Redefinition of the Offense

Rape was traditionally defined as “[c]arnal knowledge of a woman by force and against her will,” which meant penile-vaginal penetration with force and without consent.43 Reformers aimed at changing the limited definition of rape to incorporate some of the realities of assaults.44 Many states’ laws began to protect non-traditional victims: males, spouses, and cohabitants.45 States also began to criminalize a wider range of assaults, including all types of penetration and other sexual contacts.46 Another type of reform divided rape into a series of graded offenses with varying degrees of severity, based on circumstances such as the amount of coercion, the seriousness of the act (penetration vs. touching), the extent of injury inflicted on the victim, the age of the victim, and the incapacity of the victim.47 Some states even replaced the term “rape” with labels, such as “sexual assault,” in order to shift the focus of the crime from the sexual to the violent aspect of the crime.48 Finally, some states tried to eliminate the term “consent.”49 Some eliminated it from the language in their laws by relying on a particular set of circumstances to delineate when nonconsent was present (such as, when a weapon was used).50 Others retained consent terminology for rape but also criminalized nonconsensual contacts which did not require certain circumstances such as force.51

B. Evidentiary Reforms

Under traditional common law, the victim needed to corroborate her testimony in order to prove rape, judges gave cautionary instructions to juries,52 and a victim’s past sexual history was used as evidence that no

42. See Berger et al., supra note 1, at 336.
43. BATTELLE INSTITUTE, supra note 10, at 5.
44. See Searles & Berger, supra note 5, at 26.
45. Id.
46. Id.
47. BATTELLE INSTITUTE, supra note 10, at 7.
48. See id. at 7, 11-13.
49. See Berger et al., supra note 1, at 331-32.
50. See id.
51. Id.
52. Although the wording varied dramatically from state to state, most cautionary instructions contained three common elements: (1) rape is a charge that is easily made by the victim, (2) rape is a charge that is difficult for the defendant to disprove, and (3) the testimony of the victim re-
Reformers made an effort to remove evidentiary burdens that were not required for other crimes, including corroboration requirements and cautionary instructions to juries. Key to the reform movement was the enactment of rape shield laws, which restricted the admissibility of evidence on both direct and cross-examination regarding the victim's past sexual behavior with the defendant and with people other than the defendant. Many states began limiting the use of a victim's past sexual history with the defendant so that it was admissible only after an in camera hearing or admitted only for certain purposes (such as proving consent). States also began severely restricting the use of a victim's past sexual history with third parties as evidence, only allowing evidence after an in camera hearing and only for specific purposes. The specific purposes for which such evidence was allowed included showing the source of semen, an ulterior motive, or past false allegations. Some states disallowed the use of such evidence to prove consent or credibility.

C. Reforms in Statutory Age Offenses

Reformers also tried to amend the law regarding the statutory age of consent by promoting legislation that would allow consensual sexual activity to require more careful scrutiny by the jury than the testimony of the other witnesses in the trial. A typical instruction reads: "A charge such as that made against the defendant in this case is one, which, generally speaking, is easily made, but difficult to disprove even though the defendant is innocent. Therefore, I charge you the law requires that you examine the testimony of (the victim) with caution." See, e.g., State v. Smoot, 590 P.2d 1001, 1009 (Idaho 1978), overruled on other grounds by State v. LePage, 630 P.2d 674 (Idaho 1981) (noting the historical origins of this cautionary instruction while rejecting defendant's assertion that the trial court erred by not reading this instruction to the jury). The following instruction is also representative:

A charge such as that made against the defendants in this case is one which, generally speaking, is easily made and once made is difficult to disprove, even if the defendants are innocent. From the nature of a case such as this, the complaining witness may be the only witness testifying directly as to the alleged act constituting the crime. Therefore, the law requires that you examine the testimony of the prosecuting witness with caution and consider and weigh it in light of all the circumstances shown. In giving this instruction, the Court does not mean to imply an opinion as to the credibility of any witness or the weight to be given his or her testimony. United States v. Merrival, 600 F.2d 717, 719 (8th Cir. 1979) (rejecting defendant's claim that the trial court erred by refusing to read this cautionary instruction to the jury). Even the Model Penal Code contains a cautionary instruction to be read to juries that they should "evaluate the testimony of a victim or complaining witness with special care in view of the emotional involvement of the witness and the difficulty of determining the truth with respect to alleged sexual activities carried out in private." MODEL PENAL CODE § 213.6(5) (1999).

53. SPOHN & HORNEY, supra note 7, at 25.
54. In some jurisdictions, the corroboration requirement prevented convictions if the only evidence available was the victim's word. However, the corroboration requirement has been abolished in all fifty states in forcible rape cases. Berger et al., supra note 1, at 332; David P. Bryden, Forum on the Law of Rape: Redefining Rape, 3 BUFF. CRIM. L. REV. 317, 319 (2000).
55. Berger et al., supra note 1, at 332.
56. Id.
57. Searles & Berger, supra note 5, at 28-29.
58. Id. at 29.
59. Id.
60. Id.
tivity between teenagers while still protecting children. They did so by creating a series of graded offenses with commensurate penalties and eliminating the mistake-of-age defense, which had allowed defendants to avoid responsibility for their actions by claiming that the victim looked older than her actual age.

D. Reforms in the Penalty Structure

Reformers also made an effort to change the severe system of penalties for rape, which consisted of a death sentence or life imprisonment with no distinction in penalties for varying levels of seriousness of crimes. Reformers generally sought to reduce penalties but also to include mandatory minimum sentences with penalties graded according to the severity of the act.

IV. EVALUATIONS OF THE CHANGES

A. Systematic Documentation of Rape Law Reform

Since 1970, legislators in all fifty states and the District of Columbia have amended their rape laws but in dramatically different ways. Some states adopted reform in a piecemeal fashion over a long period of time, while others completely overhauled their approach to rape in a single legislative enactment. There were also several different ways in which to make changes in each of the four primary areas of reform (i.e., the definition of the offense, evidentiary requirements, statutory age offenses, and the penalty structure).

Leigh Bienen created the first qualitative state-by-state histories of rape laws in 1977 and updated her study in 1980. Although the compilation was thorough, its descriptive nature made comparisons difficult. Until 1987, no one had tried to analyze and compare rape law reforms

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61. Berger et al., supra note 1, at 332-33.
62. Id.
63. Id. at 333.
64. Id.
66. See discussion infra Section III, describing the ways in which each area of reform could be changed. For example, there are numerous ways in which the definition of the offense could be changed. It could be broadened to include more types of victims (such as men, spouses, and cohabitants), to penalize more types of assaults (such as penetration other than penile-vaginal and touching), and to encompass a single continuum of offenses rather than separate distinct offenses.
67. See Leigh Bienen, Rape II, 3 WOMEN'S RTS. L. REP. 90 (1977); Leigh Bienen, Rape III-National Developments in Rape Reform Legislation, 6 WOMEN'S RTS. L. REP. 170 (1980).
EFFECTS OF RAPE LAW REFORM

quantitatively in the fifty states. In 1987, Ronald J. Berger, Patricia Searles, and W. Lawrence Neuman created a system of variables that could be used to categorize and compare the rape laws of every state. In that same year, Searles and Berger used that system to categorize all fifty states’ laws as they stood in 1985. While the classification system created a useful way to examine and compare states’ rape laws, it is not possible to use Searles and Berger’s law data to see any patterns that may exist over time or how the current laws came into being, because the authors defined the laws in the fifty states only as they stood in 1985.

B. Legal Scholars

Controversy over the effects of rape law reform exists among legal scholars. Although their reasoning differs, legal scholars generally agree that the reforms have not been successful. Three of the most prominent legal scholars in the area of rape law reform are Catharine MacKinnon, Susan Estrich, and Lynne Henderson. MacKinnon argues that the incremental reformation of rape laws cannot work because the laws are predicated on a social structure with a power differential between men and women. The definition of rape (intercourse with force or coercion and without consent) is problematic for MacKinnon because it implies that some forced or coerced intercourse is consensual. She argues that it is too difficult to distinguish rape from sex and to tell the difference between normal “acceptable” force and “too much” force in a society where men are taught to be sexual aggressors, to expect women to resist, and to dismiss their objections. According to MacKinnon, until the power differential is eradicated or until the law reflects the “fundamental social powerlessness” of women, the laws will not be effective or reflect the reality of rape.

Susan Estrich also argues that the reforms are ineffective. She claims that rape laws are inadequate because they ignore the victim’s perspective, illustrated, in Estrich’s view, by the virtual impossibility of prosecuting “simple rape” (date rape/acquaintance rape). She argues that the laws are “‘boy’s rules’ applied to a boy’s fight” despite the fact that women perceive force and coercion differently than men do. To include women’s perspectives, Estrich argues that rape laws should define consent as “no means no” so that unreasonable mistakes as to whether a

68. See Spohn & Horney, supra note 7, at 31-32.
69. Berger et al., supra note 1, at 336-53.
70. Searles & Berger, supra note 5, at 27-43.
71. Id. at 27.
73. Id. at 172.
74. Id. at 172-74.
75. Id. at 175.
76. ESTRICH, supra note 19, at 80.
77. Id. at 13.
78. Id. at 60.
woman consented would not free the perpetrator from liability. She also argues that "extortionate threats and misrepresentations of material facts" should be included in the definition of force or coercion.

Lynne Henderson, a legal scholar who at one time held the view that not all reforms had failed, has more recently stated that "two decades of feminist law reform efforts to hold men responsible for raping women have yielded disappointing results." In 1987 and 1988, Henderson criticized Estrich for concluding that reforms failed on the basis of anecdotal stories and cases while neglecting examples which "seem to do exactly what she [Estrich] advocates." Although Henderson admitted that "work remains to be done," she applauded the fact that "progress in law and legal doctrine" had been made. In 1993, after five more years of reflection on the effectiveness of the rape law reform movement, Henderson concluded that "the problem is not so much with the law on the books in many jurisdictions as with the law in action, and with cultural images of sex and women." She argued that modern cultural beliefs about sex and women provide a lens through which men, women, prosecuting attorneys, judges, and juries view rape, resulting in a world where "most men who rape women are never held legally responsible for their conduct, and most women who are raped have no chance at successful legal recourse." Included in these modern cultural beliefs are "assertions about what women want or are as sexual beings," "a presumption of moral innocence for men and a presumption of moral guilt for women in sexual interactions," and the idea that "female submission to male sexual dominance or aggression is natural, romantic, and erotic."

Although the ideas of MacKinnon and Estrich have not been realized fully, the laws of many states have moved toward the approaches for which they argue. For example, by adopting a "no means no" standard, by severely limiting the spousal exemption to rape, and by restricting
the admissibility of evidence about the victim’s past sexual history, some states have enacted laws reflecting approaches of which MacKinnon and Estrich would approve. The complexity of the problems to which MacKinnon, Estrich, and Henderson point indicates that even as we evaluate the effectiveness of current reforms and see reformers continue to fight for laws more favorable to victims, there is an urgent need for a more comprehensive analysis of the existing cultural beliefs about sex and gender that perpetuate the image of women as inherently sexual and submissive and men as sexual aggressors. Studying and dismantling those cultural beliefs, stereotypes, and images, in addition to changing the rape laws themselves, could have a fundamental impact on the incidences of rape and the manner of rape case processing in the future.

C. Empirical Research

The first detailed empirical study of the impact of rape law reform was not conducted until 1980, and the first multi-state study was not published until after 1985. In the studies that have been conducted, social scientists have concluded that the reforms have not led to significant instrumental impacts.

Wallace Loh and Kenneth Polk, who examined the impact of rape law reform in Washington state and California, respectively, concluded that the laws had little, if any, impact on rape case processing. Wallace Loh determined from his examination of prosecution records from the King County Courthouse (Seattle) from 1972 to 1977 that “the main impact of the statutory reform has been a symbolic and educative one for society at large, rather than an instrumental one for law enforcement.” According to Loh, the most significant instrumental effect resulted from the creation of gradations of rape. Because gradations included commensurate penalties, punishment was more certain under the new law, although not necessarily more severe. However, Loh argued that rates of

89. See, e.g., MICH. COMP. LAWS § 750.520j (Supp. 1990) (adopting a very protective rape shield law in 1974 under which evidence of a victim’s prior sexual history with third parties is only admissible to show the source of semen, pregnancy, or disease, and evidence of the victim’s past sexual history with the defendant is admissible only after an in camera hearing in which it is determined that the evidence is material to a particular fact (such as consent) and that it is not overly prejudicial or inflammatory); 18 PA. CONS. STAT. ANN. § 3104 (West 2000) (adopting an extremely protective rape shield law in 1972, under which evidence of the victim’s past sexual conduct with the defendant is only admissible, after an in camera hearing, to prove consent and evidence of a victim’s past sexual conduct with persons other than the defendant is inadmissible for all purposes).


91. See Loh, An Empirical Study, supra note 90, at 550-52 (examining the impacts of rape law reform in Washington state).


94. Id.
convictions, pleas, and charges were not affected by the reform. In an examination of California reform from 1975-1982, Polk found no impact other than slight increases in the rate of filing felony complaints after arrest and in the rate of institutional sentencing after conviction. Thus, the results from Washington and California did not look promising.

The studies in which social scientists examined the impacts of Michigan law reform resulted in mixed conclusions. A 1982 study done by Jeanne Marsh, Alison Geist, and Nathan Caplan, which examined a period beginning three years before and ending three years after the reform, determined that the reform led to improved rates of arrest, overall convictions, and convictions for first degree criminal sexual conduct (forcible rape). Similarly, in a 1985 study of Kalamazoo, Michigan, Susan Caringella-MacDonald concluded that the legislation did have success in reducing attrition and enhancing conviction in Michigan. When Spohn and Horney examined Detroit, Michigan from 1970-1985, they determined that there were increases in the total number of reports, indictments, convictions, and incarcerations, and in the percentage of indictments. They also found, however, that the percentage of convictions, convictions of the original charge, and convictions resulting in incarceration all remained the same. As a result of their multi-jurisdictional study, Spohn and Horney found no observable changes in any of the other jurisdictions they studied: Chicago, Philadelphia, Houston, Atlanta, and Washington, D.C.

95. See id. at 36-42.
96. See Polk, supra note 92, at 194-98.
97. Many advocates of rape law reform consider Michigan's law to be the model of rape law reform. The reform replaced rape and other types of sexual assaults with four degrees of gender-neutral "criminal sexual conduct." MICH. COMP. LAWS § 750.520a-e (Supp. 1990). The continuum is based on the seriousness of the offense, the amount of force or coercion used by the perpetrator, the degree of injury inflicted on the victim, and the age and incapacity of the victim. Michigan removed the resistance requirement and did not require that the victim's testimony be corroborated. Lastly, Michigan enacted a very protective rape shield law under which evidence of a victim's prior sexual history with third parties is only admissible to show the source of semen, pregnancy, or disease. Evidence of the victim's past sexual history with the defendant is admissible only after an in camera hearing in which it is determined that the evidence is material to a particular fact (such as consent) and that it is not overly prejudicial or inflammatory. MICH. COMP. LAWS § 750.520j (Supp. 1990).
99. Id. at 42-44.
100. High attrition—the loss of cases from the time they come to the attention of the prosecutor—results from, among other things, victims dropping charges, cases being denied for prosecution at intake, and plea bargaining. Caringella-MacDonald, supra note 6, at 78-79.
101. SPOHN & HORNEY, supra note 7, at 100-05.
102. Id.
103. In a 1997 article, Professor David Bryden and Sonja Lengnick examined the published social science evidence and concluded that "there is growing evidence that, while the performance of the justice system in rape cases may have improved, the legal reforms have generally had little or no effect on the outcomes of rape cases." David P. Bryden & Sonja Lengnick, Rape in the Criminal Justice System, 87 J. CRIM. L. & CRIMINOLOGY 1194, 1199 (1997). In a later paper, however, Bryden seemed to maintain hope of legislative effectiveness when he stated in conclusion that there are "ample reasons for optimism about the historic problems in rape cases—if we choose our reforms wisely." Bryden, supra note 54, at 479.
The designs and approaches chosen by previous social scientists did not enable them to take into account all of the factors that are relevant in determining the effectiveness of particular rape law reforms. Most studies have looked at one state and assessed the impacts by examining a period of only three years after the enactment. By examining only one state, the studies provide little insight into the nationwide effect of reforms. Additionally, the authors could not account for the effects of history and other outside factors that may have been responsible for the observed impacts. A much longer span than three years is necessary because most states made incremental changes rather than complete overhauls. In many cases, because the states studied were not necessarily the ones whose changes should have led to the largest impacts, the studies could not reject the hypothesis that reforms did work in states that adopted more comprehensive or generally stronger reforms. Many authors chose to focus on a particular state because it adopted a particular type of reform, without looking to other elements of the law that might have remained traditional or been made more traditional, and which might therefore have counteracted the positive effects of the reforms.

V. HYPOTHESES FOR EFFECTS OF LAW REFORM ON RAPES

Ideally we would measure each kind of legal provision’s effects on the number of reports of sexual offenses accepted by the police as well-founded and the consequent number of arrests. Reformers hoped that by expanding the number of acts considered criminal, increasing the categories of people protected by the law, mitigating many of the problems that had previously led the police to disregard reports of rape, and removing many of the barriers to rape case processing, their reforms would lead police to accept more reported assaults as valid and increase arrests. In fact, because we use the Uniform Crime Reports (UCR) data collected by the Federal Bureau of Investigation (FBI) to measure crimes, we are able to measure only what the FBI defines as “actual rapes” and “clearances” for forcible rape rather than for sexual offenses in general.

104. See Spohn & Horney, supra note 7, at 31.
105. See Horney & Spohn, supra note 2, at 122.
106. Id.
107. Id. (stating further that a three-year study is flawed because effects uncovered may have been fleeting or short-lived and because delayed effects could not be detected by such short study).
108. For example, in Polk’s study, while the California statute he studied used gender-neutral language and contained a fairly restrictive rape-shield statute, its rape law also contained traditional aspects. See Polk, supra note 92. During the years Polk studied, the California statute limited its definition of rape to vaginal-penile penetration, had separate distinct offenses, and did not criminalize nonconsensual penetration or touching. Id.
109. See Berger et al., supra note 1, at 330.
In this study, we use the term "actual rapes" to mean "actual offenses known to the police," which are the total reports of forcible rape given to police that the police determine are meritorious. In other words, "actual rapes" are the reports of forcible rape the police believe are valid and will investigate. The term "clearances" means "clearances by arrest and other exceptional means" which are the forcible rapes that result in arrests.

Regardless of how the states themselves define rape, the FBI continues to measure only forcible rape, defined as "unlawful carnal knowledge of a woman forcibly and against her will." As a result, the effects of many of the reforms that redefine the offense are likely to be obscured. The hypotheses that follow describe the effects we expect the reforms to have on "actual rapes" and "clearances" for sexual offenses in general (i.e., without regard to the FBI’s definition of "rape"), as well as hypotheses for the results expected from the current data (i.e., using the FBI’s definition of "rape").

A. Redefinition of the Offense

The number of reports of sexual offenses accepted by the police as well-founded and the consequent number of arrests should increase where the definition of the offense is expanded to include more acts. Broadening the definition of the primary offense, shifting to a statute that incorporates a wide range of sex offenses in a single continuum, criminalizing nonconsensual penetration and touching, and making the crime gender-neutral should all increase the number of crimes taken seriously by the police. Because of the FBI’s limited definition of rape, however, we can expect different observable results. As the definition becomes broader, more assaults will likely be filed and prosecuted under the new crimes created by the definition. For example, more forcible rapes will be prosecuted under nonconsensual sexual contact statutes or less serious assault statutes because those crimes entail lower evidentiary burdens. Therefore, the data should show that as the definition becomes broader, fewer "actual rapes" and "clearances" should show up in the FBI statistics because they will be categorized as other crimes. Examination of the UCR data suggests that the broader definition may reduce the number of "actual rapes" and "clearances" because, in some years, jurisdictions that previously showed many rapes each year drop to zero.

The effects of changes in the definition of the crime regarding the status of spouses and cohabitants should not be as obscured, because the FBI definition does not refer to the issue. Therefore, as a state begins to allow for more spousal prosecution and for more cohabitant prosecution, we should expect an increase in well-founded reports of sexual of-

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111. See id. at 206.
112. For a further discussion of how the methodology in this study takes into account these zero counts, see discussion infra Section VII.
fenses and consequent arrests, as well as an increase in “actual rapes” and “clearances” for forcible rape in the FBI data.

B. Evidentiary Rules

The hypotheses for evidentiary rules are more straightforward than those for the redefinition of the offense. As a state begins to adopt limitations on the admissibility of evidence of the victim’s past sexual relationship with the defendant, there should be increases both in the number of well-founded reports and consequent arrests for sexual offenses generally and in the number of “actual rapes” and “clearances” specifically. One possibility is that police will become more likely to accept reports of women who have previously been involved with the accused once evidence about the victim’s prior relationship with the accused has been made irrelevant, as it may no longer appear futile to pursue the case. Changes in the admissibility of evidence of the victim’s past sexual relationship with third parties either on direct or cross-examination may have the same effects for similar reasons. Changed evidentiary standards may also make victims more likely to file charges.

C. Mistake of Incapacity Defense

The effects of limiting a defendant’s mistake of incapacity defense should not be obscured, because the FBI definition does not refer to the issue. A mistake of incapacity defense allows an accused person to mitigate culpability by claiming that he did not know the victim could not consent due to incapacity. A victim may be incapacitated as a result of being drunk, asleep, or mentally disabled. If the mistake of incapacity defense is explicitly denied to the defendant, the number of well-founded reports of sexual offenses and the consequent number of arrests should increase, because defendants who previously claimed they did not know the victim was incapacitated will be arrested and the complaint will be well-founded under the new law. For the same reasons, we also expect an increase in the number of “actual rapes” and “clearances.”

VI. Methodology

In this study we try to correct for many of the limitations in the published studies previously described. We use statistical analysis to examine changes in the laws annually from 1970-1991 so that we can see the full effect of the reforms. By looking at a twenty-two-year span, we can see trends in the laws and in case-processing more clearly. Furthermore, this approach allows us to distinguish the effects associated with different kinds of reforms. We can also account for history and some other outside factors by including variables to measure national time trends and to measure permanent differences not only between states but also between particular police agencies.
We used a modified version of the format created by Berger, Searles, and Neuman (and implemented by Searles and Berger),\textsuperscript{114} increasing the number of years analyzed and altering some of the coding categories.\textsuperscript{115} We implemented the coding system each year for each variable rather than for just one particular year as the Searles and Berger study does. We collected and coded data from all fifty states' and the District of Columbia's session laws from 1970 to 1992. We used the coded data to identify patterns of reform and to perform statistical analyses to estimate how rape law reforms affected the number of "actual rapes" and the number of "clearances" during the years 1970-1991.\textsuperscript{116}

A. Measuring State Rape Laws

In order to measure each state’s rape laws and reforms, we examined the codes and session laws of the fifty states and the District of Columbia. We used eleven of the sixteen variables used by Searles and Berger, representing the most significant components of rape laws (Table 1).\textsuperscript{117} The first seven variables describe the definition of the offense and variables 8-11 describe evidentiary rules. We assigned numerical codes to the categories of five of the variables to indicate variation in possible statutory constructions ranging from progressive ($x=0$), many of which are consistent with feminist goals, to conservative ($x=8$), as in common law. The remaining variables are coded as sets of dummy variables,\textsuperscript{118} each taking the value "zero" (provision absent) or "one" (provision present). Each state was coded using this system annually from 1970-1992.

Variables 1-7 deal with the definition of the offense, with 5-7 specifically addressing the status of spouses in rape laws.\textsuperscript{119} Variable 1 indicates the definition of the primary offense, which includes what has traditionally been considered rape. Some states retain a traditional definition of the crime in which the offense is termed "rape" and includes only

\begin{itemize}
  \item \textsuperscript{114} See discussion infra Section IV.A.
  \item \textsuperscript{115} Searles & Berger, supra note 5; Berger et al., supra note 1.
  \item \textsuperscript{116} While we collected and coded data from all fifty states' and the District of Columbia's session laws from 1970-1992, we only used data from 1970-1991 in the statistical analysis because the data on "actual rapes" and "clearances" were only available for the twenty-two year period, rather than the twenty-three year period.
  \item \textsuperscript{117} For a complete description of the variables, see Searles & Berger, supra note 5, at 27-29. Omitted from the current analysis are three variables relating to statutory age offenses and two variables relating to periods of incarceration. We have excluded those variables because we do not think that they should have an effect either on "actual rapes" or "clearances."
  \item \textsuperscript{118} A set of "dummy variables" is used in a regression model to measure the effects that categories of an unordered, qualitative variable have on the expected value of the dependent variable. Each category of the qualitative variable is associated with one dummy variable that is coded 1 if the category is present for an observation and 0 if the category is not present for the observation. When the regression model includes an intercept, the qualitative variable is represented in the model by including all but one of its dummy variables as regressors. The coefficient for each dummy variable measures the difference between the expected value of the dummy variable when the qualitative variable has that category and the expected values when the qualitative variable has the category of the dummy variable that was omitted from the set of regressors.
  \item \textsuperscript{119} See Searles & Berger, supra note 5, at 27-28.
\end{itemize}
vaginal-penile intercourse.\textsuperscript{120} The most feminist and liberal definitions are those that term the offense "sexual assault"\textsuperscript{121} and include many types of penetration (including vaginal, anal, oral, and possibly even object penetration) and sexual contact (such as touching).\textsuperscript{122} Many states fall in between the two extremes mentioned above.\textsuperscript{123}

**Table 1: State Legal Provisions**

Descriptions of the Legal Provisions:

Variable 1: Definition of the Primary Offense  
Variable 2: Single Continuum of Sex Crimes  
Variable 3: Criminalization of Nonconsensual Sexual Contacts  
Variable 4: Gender of Offender and Victim  
Variable 5: Spousal Exemptions  
Variable 6: Exceptions to the Spousal Exemption  
Variable 7: Status of Cohabitants  
Variable 8: Evidence Regarding Past Sexual History with Defendant  
Variable 9: Evidence Regarding Past Sexual History with Others  
Variable 10: Evidence Regarding Past Sexual History on Cross Examination  
Variable 11: Mistake of Incapacity Defense

Variable 2 specifies whether state laws define rape or sexual assault along a single continuum.\textsuperscript{124} State statutes that are most compatible with feminist goals use a single continuum in which a wide range of offenses are combined within a single offense classification by using varying degrees of severity.\textsuperscript{125} More conservative statutes delineate separate offenses but have some degree structure within the different offenses (such as two degrees of rape, two degrees of sodomy, and sexual misconduct).\textsuperscript{126} Lastly,
the statutes which are the farthest from feminist goals outline different offenses without any degree structure.\textsuperscript{127}

Variable 3 shows whether nonconsensual sexual contacts are prohibited.\textsuperscript{128} In this study the term "nonconsensual" is used to mean that neither force nor other extreme circumstances (such as physical resistance) are necessary for the assault to be considered criminal.\textsuperscript{129} Although all states criminalize forced sex under some extreme circumstances, the most conservative states require conditions such as force, threat, and injury to be present in order to validate all rape cases.\textsuperscript{130} More moderate statutes criminalize some non-consensual acts, but require conditions such as force, threat, and injury to be present for other non-consensual acts.\textsuperscript{131} Feminist-oriented statutes follow the "no means no" approach, which does not require additional conditions to be present.\textsuperscript{132}

Variable 4 outlines the gender classification of the offender and the victim for sex crimes.\textsuperscript{133} The statutes that reflect reformers' goals are those that use gender-neutral categories for both the perpetrator and victim.\textsuperscript{134} More traditional statutes define rape in terms of a male perpetrator and female victim, but define some sex crimes in gender-neutral terms.\textsuperscript{135} The most traditional statutes define all sex crimes in terms of a male perpetrator and female victim.\textsuperscript{136}

Variables 5, 6, and 7 deal with the status of spouses in rape statutes. Variable 5 describes legislative spousal exemptions for offenses pertaining

\textsuperscript{127} See, e.g., CAL. PENAL Code. §§ 261, 264.1, 286 (West 1993) (including rape, rape or penetration of genital or anal openings by foreign object, and sodomy).

\textsuperscript{128} Searles & Berger, supra note 5, at 28.

\textsuperscript{129} Id.

\textsuperscript{130} For example, under Georgia's rape statute, unless the victim is younger than 10 years old, a man commits rape when he has carnal knowledge of a female "forcibly and against her will." GA. Code Ann. § 16-6-1(a) (Supp. 2000).

\textsuperscript{131} For example, since 1976, Pennsylvania's statute has provided that, "[t]he alleged victim need not resist the actor in prosecutions under this chapter [referring to the chapter on sexual offenses]: provided, however, that nothing in this section shall prohibit a defendant from introducing evidence that the alleged victim consented to the conduct in question." 18 PA. CONS. STAT. ANN. § 3107 (2000). Despite that provision, the crimes involving penetration require extra circumstances (such as force or threats) to be present. 18 PA. CONS. STAT. ANN. § 3121 (2000).

\textsuperscript{132} For example, under Wisconsin's rape statute, "[w]hoever has sexual intercourse with a person without the consent of that person is guilty of a Class D felony." WIS. STAT. ANN. § 940.225(3) (West 1996). For purposes of the statute, "consent" is defined as "words or overt actions by a person who is competent to give informed consent indicating a freely given agreement to have sexual intercourse or sexual contact." WIS. STAT. ANN. § 940.225(4) (West 1996).

\textsuperscript{133} See Searles & Berger, supra note 5, at 28.

\textsuperscript{134} As of 1992, 80% of states used sex-neutral terminology for the offender and the victim. For example, New Jersey's chapter on sexual offenses includes a definition section, in which "actor" is defined as "a person accused of an offense proscribed in under this act" and "victim" means "a person alleging to have been subjected to offenses proscribed by this act." N.J. STAT. ANN. § 2C:14-1 (West 1995 & Supp. 2000).

\textsuperscript{135} For example, in the 1980s and 1990s, prior to an amendment in 2000, the Alabama rape statute defined rape in the first and second degrees as male perpetrator/female victim crimes, but allowed female perpetrators and male victims for other crimes such as sexual misconduct and sexual abuse in the first and second degrees. ALA. Code § 13A-6-61, -62, -65, -66, -67 (1994 & Supp. 1998), amended by 2000 Ala. Acts 2000-726 (substituting "person" for "male," inserting, "or she" and substituting "member of the opposite sex" for "female").

\textsuperscript{136} For example, Georgia's statute still specifies that a rape is committed by a male against a female victim. GA. CODE ANN. § 16-6-1(a) (1998 & Supp. 2000).
to adults.\textsuperscript{137} The most conservative statutory language exempts spouses from prosecution of all sex crimes.\textsuperscript{138} The language that is most consistent with feminist goals is that language which allows spousal prosecution for all crimes in an explicit provision\textsuperscript{139} and those that have abolished previous exemptions in the law.\textsuperscript{140} Many statutes fall between traditional statutes and feminist statutes. For example, some states have spousal exemptions for some sexual offenses, but they allow prosecution of spouses for rape if the offense is accompanied by extra factors such as force, injury, or threats.\textsuperscript{141}

Variable 6 further defines the spousal exemption by specifying its statutory exceptions.\textsuperscript{142} The extremes for this variable are the same as for Variable 5. The most traditional statutes have no exceptions to the spousal exemption.\textsuperscript{143} In contrast, most feminist-oriented statutes have no spousal exemptions whatsoever (spouses may be tried for all acts).\textsuperscript{144} Many states that do have a spousal exemption, however, limit that exemption by providing circumstances under which it can be disregarded.\textsuperscript{145}

\begin{enumerate}
\item Searles & Berger, supra note 5, at 28.
\item For example, New York still contains a statutory exemption for spouses for all sex crimes. N.Y. PENAL LAW § 130.00 (McKinney 1998).
\item See, e.g., N.J. STAT. ANN. § 2C:14-5 (1995 & Supp. 2000) (specifically providing that no actor shall be presumed to be incapable of committing a sexual offense (not limited to traditional rape) by virtue of marriage to the victim).
\item For example, in 1970 under the California statute, a husband could not “rape” his wife. CAL. PENAL CODE § 261 (West 1970). In 1979, however, California created a separate code provision to explicitly provide for spousal rape. CAL. PENAL CODE § 262 (West 1999).
\item The West Virginia statute provides one example where aggravating factors are required to allow spousal prosecution for rape. In 1976, when the current rape statute was adopted in West Virginia, it included a spousal exemption for all crimes. W. VA. CODE §§ 61-8B-1 to -5, -7 to -9 (1977). After the West Virginia statute was amended in 1984, it continued to include an exemption for some crimes, but did not allow a spousal exemption for rape with force or injury. W. VA. CODE § 61-8B-6 (Supp. 1984) (repealed 2000). Although West Virginia removed the spousal exemption from the definitions of “sexual intercourse” and “sexual intrusion” in 2000, there are still exemptions for victims and actors of certain ages. W. VA. CODE §§ 61-8B-1, -3, -5 (2000). Texas provides another example of a state whose laws require aggravating circumstances to be present in order to prosecute a spouse for rape. In 1991 Texas amended its sexual assault statute by adding a subsection requiring, “a showing of bodily injury or the threat of bodily injury” for “[a] prosecution against a spouse under this section.” TEX. PENAL CODE ANN. § 22.011(g) (Vernon 1994), amended by 1993 Acts, 73rd Leg., ch. 900, § 1.01 (Vernon 1994) (removing subsection (g)).
\item Searles & Berger, supra note 5, at 27-8.
\item In the years prior to 1979, when California did not allow spouses to be prosecuted for rape, the California statute did not provide any exceptions to its spousal exemption. CAL. PENAL CODE § 261 (West 1970).
\item For example, New York’s statute from 1978 to the present provides that the spousal exemption does not apply if the female is “not married” to the actor. N.Y. PENAL LAW § 130.00 (McKinney 1998 & Supp. 2000). For the purposes of the sexual offenses article, “not married” means (a) the lack of an existing relationship of husband and wife between the female and the actor which is recognized by law, or (b) the existence of the relationship of husband and wife between the actor and the female which is recognized by law at the time the actor commits an offense proscribed by this article by means of forcible compulsion against the female, and the female and actor are living apart at such time pursuant to a valid and effective: (i) order issued by a court of competent jurisdiction which by its terms or in its effects requires such living apart, or (ii) decree or judgement of separation, or (iii) written agreement of separation subscribed by them and acknowledged in the form required to entitle a deed to be recorded which contains
Such circumstances include situations in which the couple is living apart or they have a legal/written agreement for separation.\textsuperscript{146}

Variable 7 shows whether state statutes exempt cohabitants from prosecution.\textsuperscript{147} In many cases a "spouse" is defined as a "person living with another person as husband and wife regardless of legal status."\textsuperscript{148} Conservative legislation exempts cohabitants from prosecution\textsuperscript{149} while legislation following feminist goals does not exempt cohabitants.\textsuperscript{150}

Variables 8, 9, and 10 describe the use of a victim's past sexual conduct as evidence during trial. Variable 8 outlines the status of admissibility by the defense of evidence concerning the victim's past sexual behavior with the defendant.\textsuperscript{151} Every state admits this evidence for some purposes.\textsuperscript{152} The most liberal, feminist-oriented statutes, however, admit this evidence only to prove consent or credibility and make it inadmissible for all other purposes.\textsuperscript{153} For these statutes, a hearing is required before trial to determine if the evidence can be admitted.\textsuperscript{154} In order for such evidence to be admitted, the probative value of the evidence must outweigh its possible prejudicial consequences.\textsuperscript{155} More traditional statutes have no

\begin{footnotesize}
\begin{enumerate}
\item id.
\item For example, from 1983 until it was amended in 1995, the Texas statute provided that, for purposes of the sexual crime laws, persons married to each other were not treated as spouses "if they do not reside together or there is an act pending between them for dissolution of the marriage or for separate maintenance." \textit{TEX. PENAL CODE ANN.} § 22.011(c)(2) (Vernon 1994 & Supp. 2001).
\item Searles & Berger, supra note 5, at 28.
\item For example, for purposes of West Virginia's code provisions governing sexual offenses, "married" is defined, in addition to its legal meaning, to include "persons living together as husband and wife regardless of the legal status of their relationship." \textit{W.VA. CODE} § 61-8B-1 (2000).
\item For example, in the New York statute on sex offenses, "female" is defined as "any female person who is not married to the actor," and "not married" includes "the lack of an existing relationship of husband and wife between the actor and the female which is recognized by law." \textit{N.Y. PENAL LAW} § 130.00 (McKinney 1998 & Supp. 2000).
\item Searles & Berger, supra note 5, at 28.
\item Searles & Berger, supra note 5, at 36 (showing that in 1986 each state allowed a defendant to admit evidence regarding past sexual conduct of the victim with the defendant for some purpose).
\item For example, in 1972 Pennsylvania adopted an extremely protective rape shield law in which evidence of the victim's past sexual conduct with the defendant is admissible, after an \textit{in camera} hearing, only to prove consent. \textit{18 PA. CONS. STAT. ANN.} § 3104 (West 2000).
\item id.
\item For example, Michigan allows evidence of the victim's past sexual conduct with the defendant for all purposes, provided that the judge finds that it "is material to a fact at issue in the case and that its inflammatory or prejudicial nature does not outweigh its probative value." \textit{MICH. COMP. LAWS} § 750.520j (1991).
\end{enumerate}
\end{footnotesize}
EFFECTS OF RAPE LAW REFORM

evidence reform statute\textsuperscript{156} or do not place significant restrictions on the admissibility of evidence.\textsuperscript{157}

Variable 9 deals with the admissibility of evidence concerning the victim's past sexual behavior with third parties.\textsuperscript{158} The more conservative statutes have no rape evidence reform statute\textsuperscript{159} and the most limiting statutes restrict all such evidence.\textsuperscript{160} Moderate statutes allow this evidence to be admitted for some purposes.\textsuperscript{161} An example of a statute with moderate restrictions is one that admits evidence about past sexual history with third parties only after a hearing to show "consent, credibility, or fabrication" and makes all other such evidence inadmissible.\textsuperscript{162}

Variable 10 delineates whether the defense may admit evidence during cross-examination regarding the victim's past sexual behavior with third parties that had been previously introduced by the prosecutor.\textsuperscript{163} Although many states are silent on the issue, others have included it within their statutes. The most conservative statutes permit all evidence to be admitted, and the most feminist-oriented statutes do not admit the evidence under any circumstances.\textsuperscript{164}

Variable 11 states whether the law permits a defense grounded on mistake of incapacity.\textsuperscript{165} The most traditional laws permit a general mistake defense which is not specific to incapacity and incorporates many other types of mistakes the defendant can make.\textsuperscript{166} Other less traditional statutes permit a specific mistake of incapacity defense.\textsuperscript{167} Laws that

\textsuperscript{156.} For example, in 1992, Arizona, the District of Columbia, Maine, and Utah were among the jurisdictions that had no rape evidence reform statute.

\textsuperscript{157.} See, e.g., WIS. STAT. ANN. § 972.11 (West 1998).

\textsuperscript{158.} Searles & Berger, supra note 5, at 29.

\textsuperscript{159.} See supra note 156.

\textsuperscript{160.} For example, under Pennsylvania's laws, evidence of the victim's past sexual conduct with persons other than the defendant is inadmissible for all purposes. 18 PA. CONS. STAT. ANN. § 3104(a) (West 2000).

\textsuperscript{161.} For example, since its enactment in 1975, Michigan's rape law has provided that evidence regarding the victim's sexual history with third parties is admissible only to show "the source or origin of semen, pregnancy or disease," provided that the judge finds the proffered evidence "is material to a fact at issue in the case and that its inflammatory or prejudicial nature does not outweigh its probative value." MICH. COMP. LAWS § 750.520j (1991).

\textsuperscript{162.} For example, prior to 1995, New Jersey's rape shield law permitted evidence of sexual conduct with third parties only after a hearing and only to prove "the source of semen, pregnancy or disease" and to negate the element of force or coercion. N.J. STAT. ANN. § 2C:14-7 (1978). With legislation in 1995, the legislature no longer allowed the introduction of a victim's past sexual history with persons other than the defendant to negate the element of force or coercion. N.J. STAT. ANN. § 2C:14-7 (West 1995 & Supp. 2000). See also MICH. COMP. LAWS § 750.520j (1991) (permitting, after an in camera hearing, only evidence of "specific instances of sexual activity showing the source or origin of semen, pregnancy, or disease").

\textsuperscript{163.} Searles & Berger, supra note 5, at 29.

\textsuperscript{164.} See, e.g., W.VA. CODE § 61-8B-11(b) (2000) (providing that evidence of victim's sexual conduct is generally not admissible, but may be used to impeach credibility).

\textsuperscript{165.} Searles & Berger, supra note 5, at 29.

\textsuperscript{166.} See, e.g., N.J. STAT. ANN. § 2C:2-4 (West 1995). New Jersey does not, however, allow the defense if the defendant made a mistake as to the victim's age. N.J. STAT. ANN. § 2C:14-5(c) (West 1995).

\textsuperscript{167.} See, e.g., N.Y. PENAL LAW § 130.10 (McKinney 1998) ("In any prosecution under this article in which the victim's lack of consent is based solely upon his incapacity to consent because he was mentally defective, mentally incapacitated or physically helpless, it is an affirmative defense that
align with feminist goals specifically state that such a defense may not be used.\textsuperscript{168}

**B. Trends in Rape Law Reform**

In each category of legal provisions, the trend from 1970 through 1992 was for states to change from traditional, conservative laws to more feminist, liberal ones. The trend was to move away from statutes that defined rape as "carnal knowledge of a woman by force and against her will" toward much more inclusive statutes. Such trends can be seen in the plots presented in Figures 1-11.\textsuperscript{169} Each plot in these figures shows the number of states that have the type of legal provision in effect in each year from 1970 through 1992. Figures 1 through 4 show that states tended to reform their laws by including a broader range of offenses and protecting a wider range of victims. By the end of the period, most states' statutes had criminalized acts other than vaginal penetration, including all types of penetration, touching, and nonconsensual sexual contacts. Most states had also respecified the crime in a gender-neutral manner. Such broadening and more consent-based redefinitions occurred mostly during the 1970s. Figures 5 through 7 show that most states have changed their laws to allow spouses and cohabitants to be prosecuted at least under some circumstances. Reforms of this type continued to some extent into the mid-1980s.

Figures 8 through 10 show that during the 1970s evidentiary statutes were changed in about half the states to protect victims from many attacks regarding their past sexual histories. Victims previously were subjected to those attacks by the police, criminal justice officials, and the courts. Figure 11 shows that several states limited or made unavailable the mistake of incapacity defense. On the whole, the trend has been to encompass more types of offenses and victims and to provide victims of sexual crimes with better treatment than in the past.

**VII. Statistical Analysis of State Laws' Effects on Forcible Rapes**

We use statistical methods to analyze the number of "actual rapes" and "clearances" during the years 1970 through 1991 to estimate some of the effects changes in states' legal provisions had on police agencies' treatment of rape. The data on rape reports come from the UCR com-


\textsuperscript{169} See Appendix A, Figures 1 through 11 (indicating the number of states with a particular legal provision at any given point in time).
The unit of observation in each year is the police agency. Our analysis includes only the 3,322 agencies reported in the data files in every year throughout the twenty-two year period. We analyze annual totals of reported rapes on a per capita basis: the number of rape reports for each agency-year observation is divided by the population (in 1,000s) covered by each agency’s jurisdiction in the referent year. Occurrences of invalid values for the population or the reported rape counts in the data files leave us with a sample size of 72,316 agency-years.

The estimation methods we use correct for the fact that, in some instances, changes in the laws appear to have caused rape counts to have been censored in the UCR data. Evidence that there are reporting problems can be seen clearly in Figures A.1 through A.5 in the Appendix, which show the raw number of “actual rapes” for the police agencies in our data aggregated for each state in each year. With a few exceptions (Alaska, Hawaii, and Washington, D.C.), the raw number of rapes in each state tends to increase over the twenty-two year period. Dramatic variations from this pattern in several states indicate reporting problems. The count falls from values in the hundreds or thousands to virtually zero for Florida in 1988 and 1989, Illinois from 1985 through 1991, Iowa in 1991, Kentucky in 1988, and South Carolina in 1991. There can be no question that those zero counts are spurious. Other states show large declines in some years, although not all the way to zero, e.g., Minnesota in 1990, suggesting that reporting problems affected some but not all agencies in the state.

The most likely reason for a systematic relationship between reporting problems and legal reforms is the previously described potential for mismatches between the FBI’s definition of “forcible rape” and the definitions of sexual assault and related crimes propounded in some states’ laws. While expanded definitions of rape may increase the number of crimes reported to and deemed well-founded by the police, such definitions may also cause police agencies to reclassify (or misclassify) the crimes when reporting to the FBI. In principle, changes in legal definitions that produce such reclassifications ought to reduce the number of “forcible rapes” as defined by the FBI to zero, if all instances of such crimes are treated the same way. By isolating the laws’ effects on the chances that an agency reports no “forcible rapes” at all in a particular year, we hope to get a better sense of the way different legal provisions affect rape reports and police agencies’ responses.

To prevent censoring from distorting our estimates of the effects changes in the laws have had on rapes and arrests, we use two-stage esti-
We begin by using a probit regression model to estimate how different legal provisions affected the probability that the number of "actual rapes" reported for an agency in a year was not zero. We then use functions of those estimated effects to make adjustments in models for the per capita count of "actual rapes" and for the probability that an "actual rape" is cleared by arrest.

The distribution of reported rapes in the UCR data helps justify the basic features of our statistical treatment. The first point to note is that, of the 72,316 agency-year observations in our sample, 30,592 have a value of zero for the number of reported forcible rapes judged well-founded by the police. The distribution of the remaining 41,724 positive values seems to closely approximate a log-normal distribution. This pattern can be seen in the empirical kernel density plot presented in Figure A.6 in the Appendix. The figure shows the estimated density over the whole sample of the natural logarithm of the positive counts of "actual rapes" per 1,000 people. The distribution is quite similar in shape to a Normal distribution. Other diagnostics (such as normal-quantile plots) also show the similarity to a Normal distribution to be quite close.

To define the probit regression specification we use to approximate the probability that the observed count of rapes is positive for a particular agency-year, we assume that for each agency \( i \) in state \( s \) for year \( t \) there are: a Normally distributed unobserved random variable \( u_{ist} \), with mean zero and variance one; \( K \) observed explanatory variables defined for each state and year, \( x_{1ist}, x_{2ist}, \ldots, x_{Kist} \); and \( K + 1 \) unknown constants \( a_0, \ldots, a_K \).

We consider the unobserved random variable \( y_{ist} \) defined by

\[
y_{ist} = a_0 + \sum_{j=1}^{K} a_j x_{jist} + u_{ist}.
\]

We think of \( y_{ist} \) as determining whether the observed per capita count of rapes \( w_{ist} \) for agency \( i \) in state \( s \) and year \( t \) is positive, according to the rule that if \( y_{ist} > 0 \) then \( w_{ist} > 0 \), otherwise \( w_{ist} = 0 \). The explanatory variables include variables that represent the different legal provisions, along with a set of dummy variables used to pick up any nationwide trend in the probability that each police agency reports a positive count of rapes. The codings and other details regarding the explanatory variables are described in more detail below.

172. A probit regression model declares that for an observed dichotomous variable \( y \) there is an unobserved random variable \( z \) such that if \( z > 0 \) then \( y = 1 \) and if \( z \leq 0 \) then \( y = 0 \). The unobserved variable \( z \) breaks into two parts, \( z = x + e \), where \( x \) is a function that the analyst specifies of observed variables and unknown coefficients (to be estimated), and \( e \) is an unobserved standard Normal variable.
173. A random variable has a log-normal distribution if its logarithm has a Normal distribution.
174. See generally B.W. SILVERMAN, DENSITY ESTIMATION FOR STATISTICS AND DATA ANALYSIS (1986).
For the positive counts of rapes we use what is known as a compound-symmetry random effects regression specification,175 with a correction for censoring. We use the random effects model because we believe that each police agency has a different baseline rate of "actual rapes" that does not change appreciably over time and is not affected by the various legal provisions that we have measured. The random effects specification allows each agency to have a different mean. Because we assume that the effects are unrelated to the laws, their presence simply increases the overall variance in the positive counts of "actual rapes." But taking the random effects into account sharpens the inferences we can make about the effects the laws have on the positive counts. In light of the apparently log-normal distribution of the positive counts, we write the specification in terms of the natural logarithm of the counts. Because of the restriction to only positive counts, we add the Mills ratio, $\phi(\hat{y}_{st})/\Phi(\hat{y}_{st})$,176 to the set of explanatory variables used in the probit regression specification, where using the maximum likelihood estimates $\hat{a}_j$ we have $\hat{y}_{st} = \hat{a}_0 + \sum_{j=1}^K \hat{a}_j x_{jst}$, and $\phi$ and $\Phi$ respectively denote the standard Normal density and cumulative distribution functions. The model for positive counts $w_{ist}^+$ is

$$\log w_{ist}^+ = b_0 + \sum_{j=1}^K b_j x_{jst} + c\phi(\hat{y}_{st})/\Phi(\hat{y}_{st}) + \delta_{ist} + \epsilon_{ist}$$ (1)

where $\epsilon_{ist}$ is a Normally distributed unobserved random variable with mean zero and variance $\sigma_\epsilon^2$, and $b_0, ..., b_K, c$ are constants. The term $\delta_{ist}$, which is constant over time but varies across agencies, represents our assumption that even apart from the state-level legal provisions that affect how police behave, each police agency has a distinctive long-run base frequency of rape reporting. These base frequencies $\delta_{ist}$ are treated as Normally distributed random effects, with mean zero and variance $\tau_\delta^2$. Such a treatment seems reasonable both because of the large number of police agencies in our sample, and in light of the empirical distribution of rape reports, as shown in Figure A.6 in the Appendix. The $\delta_{ist}$ and $\epsilon_{ist}$ variables are assumed to be uncorrelated.

The Mills ratio is in a sense intrinsic to the model for positive counts, because some agencies that cover small populations will in fact in some years receive no reports of crimes that meet the definition of "forcible rape." Such zero counts are true zeroes rather than being induced by misclassification, and therefore might be described as selected rather than censored. Nevertheless the zero counts have the same implications for model specification. Consider that there is an unobserved per capita count variable $\tilde{w}_{ist} > 0$ generated by

---

176. Given the assumption that the positive counts of "actual rapes" are log-normal, the Mills ratio measures the increase in the expected value of the count of "actual rapes" given that it is known to be positive, i.e., not censored.
\[
\log \tilde{w}_{ist} = b_0 + \sum_{j=1}^{K} b_j x_{jst} + d_{ist} + e_{ist}
\]

where \(x_{jst}\) and \(b_j\) are as above, and \(d_{ist}\) and \(e_{ist}\) are Normal both with mean zero and variances respectively \(\tau^2\) and \(\sigma^2\). The parameter \(c\) in equation (1) then equals \(-\sigma_{ue}\), where \(\sigma_{ue}\) denotes the covariance between \(u_{ist}\) and \(e_{ist}\).\(^{177}\) If \(c \neq 0\) then \(\tau^2 \neq \tau^2_e\) and \(\sigma^2 \neq \sigma^2_e\), so that estimating the variance components of the underlying variable \(\tilde{w}_{ist}\) requires some extra steps.\(^{178}\) Even if we do not wish to go so far as to assume that unobserved positive counts underlie all of the observed zeroes, we know that many truly positive counts are being censored due to misreporting so that the correct variance components probably fall somewhere between \((\tau^2_e, \sigma^2_e)\) and \((\tau^2, \sigma^2)\).

In these models the effect a particular law has on "actual rape" counts is primarily represented by the value of the coefficient \(b_k\) for the variable \(x_{kst}\) that measures variations in that legal provision. Using the formulation of equation (2), the expected count of rapes for agency \(i\) in state \(s\) and year \(t\) given laws measured by the variables \(x_{jst}\) is

\[
E\tilde{w}_{ist} = \exp \left\{ b_0 + \sum_{j=1}^{K} b_j x_{jst} + \left( \sigma^2 + \tau^2 \right)/2 \right\}
\]

where \(\exp\{.\}\) denotes the exponential function. This implies that if \(x_{kst} = x_0\) measures one version of a legal provision and \(x_{kst} = x_1 = x_0 + 1\) measures another, then the difference in the expected count associated with that difference alone is \(E(\tilde{w}_1 - \tilde{w}_0) = \left(\exp\{b_k\} - 1\right)E\tilde{w}_0\). Thus the version of the law measured by \(x_1\) is associated with a higher expected count if \(b_k > 0\) and with a lower expected count if \(b_k < 0\). The expected counts and differences in expected counts represented in this way in terms of equation (2) are the appropriate way to assess the laws' effects. Assuming that using the Mills ratio in equation (1) does effectively correct for censoring associated with the laws, then the coefficients \(b_j\) of equation (2) represent the effects the laws have on rape counts apart from any distortions that may be due to reported crimes being misclassified. We are interested in those undistorted effects.

We represent the number of "clearances" reported for each agency in each year as a proportion of the total number of "actual rapes" reported for that agency and year. The proportion varies randomly over

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177. See Maddala, supra note 171, at 223-24.

178. Following Maddala, we estimate \(\tau^2\) and \(\sigma^2\) by computing \(\hat{\epsilon}_{ist} = \log w_{ist}^* - \sum_{j=1}^{K} \hat{b}_j x_{jst}\) and then estimating the specification \(\hat{\epsilon}_{ist} = \hat{d}_{ist} + \hat{e}_{ist}\) where \(\hat{e}_{ist}\) has mean zero. We obtain the estimate \(\hat{\tau}^2\) directly as the estimate of \(\hat{E}\hat{d}_{ist}^2\), while we use the estimate \(\hat{\sigma}_{\hat{e}^2}\) of \(\text{Var}(\hat{e}_{ist})\) to compute \(\hat{\sigma}^2 = \hat{\sigma}_{\hat{e}^2}^2 + \sum_a \hat{c}_a^2 \hat{y}_a \phi(\hat{y}_a)/\alpha(\hat{y}_a)\). Id. at 225.
agencies according to a probability distribution that depends on the state laws in effect in the referent year. Using \( m_{ist} > 0 \) to denote the population in an agency's jurisdiction, the raw total number of "actual rapes" is \( r_{ist} = m_{ist} \psi_{ist} \). The number of "clearances" is denoted by \( v_{ist} \leq r_{ist} \). We assume that for each agency and year there is a probability \( p_{ist} \) such that whenever the count of "actual rapes" is positive, the observed number of "clearances" has the binomial distribution produced by taking \( r_{ist} \) independent Bernoulli trials each having probability of success \( p_{ist} \). The probability \( p_{ist} \) is drawn from a beta distribution with parameters \( \xi_{ist} > 0 \) and \( \psi_{ist} > 0 \), so that for positive rape counts the core model is beta-binomial,\(^{179}\) with heterogeneity across the agencies in each state in each year.\(^{180}\) The observed number of "clearances" is zero if the count of "actual rapes" is zero. We assume that "clearances" are affected by censoring only because they inherit the censoring that affects rapes: we assume that "clearances" are not subject to independent misclassifications. In modifying the beta-binomial model for censoring we therefore use the probability that \( r_{ist} > 0 \), which we estimate using the first-stage quantities \( \Phi(\tilde{y}_{ist}) \). The marginal distribution of the observed number of "clearances" in our modified beta-binomial model therefore becomes

\[
\text{prob}(v_{ist} \mid r_{ist}, \tilde{y}_{ist}, \xi_{ist}, \psi_{ist}) = \begin{cases} 
\Phi(\tilde{y}_{ist}) & \frac{B(\xi_{ist} + v_{ist} + r_{ist}, \psi_{ist})}{B(\xi_{ist}, \psi_{ist})} + 1 - \Phi(\tilde{y}_{ist}), \quad \text{for } v_{ist} = 0 \\
\Phi(\tilde{y}_{ist}) \frac{B(r_{ist} - v_{ist}, \psi_{ist} + r_{ist})}{B(\xi_{ist}, \psi_{ist})} & \text{for } v_{ist} > 0 
\end{cases}
\]

\( (3) \)

where \( B(\xi, \psi) = \int_0^1 p^{\xi-1}(1-p)^{\psi-1} \, dp \) is the beta function.\(^{182}\) The distribution depends on state laws through the specifications

\[
\xi_{ist} = \exp \left\{ \alpha_0 + \sum_{j=1}^{K} \alpha_j x_{ist} \right\}
\]

and

\[\]
\[
\psi_{st} = \exp\left\{ \beta_0 + \sum_{j=1}^{k} \beta_j x_{jst} \right\},
\]
where \( \alpha_j \) and \( \beta_j \) denote unknown constants. The expected probability that an “actual rape” reported to an agency in state \( s \) in year \( t \) is cleared by arrest is \( E(p_{ist} | \xi_{st}, \psi_{st}) = \xi_{st} / (\xi_{st} + \psi_{st}) \) and the variance of the probability is \( \text{Var}(p_{ist} | \xi_{st}, \psi_{st}) = \xi_{st} \psi_{st} / (\xi_{st} + \psi_{st})^2 (\xi_{st} + \psi_{st} + 1) \). If \( x_{kst} = x_0 \) and \( x_{kst} = x_1 = x_0 + 1 \) measure different versions of a legal provision, the difference in the odds that the rape report results in an arrest can be measured by \( \log \left( \frac{p_{1st}/(1 - p_{1st})}{p_{0st}/(1 - p_{0st})} \right) = \alpha_k - \beta_k \), so that the version of the law measured by \( x_1 \) is more likely to produce an arrest if \( \alpha_k > \beta_k \) and less likely if \( \alpha_k < \beta_k \).

The state legal provisions we distinguish in the analysis and the numerical values we use for the explanatory variables \( x_{jst} \) are presented in Table 2. For some kinds of provisions we use a single variable to represent the variation in state laws. These variables are Single Continuum of Sex Crimes, Spousal Exemptions, Exceptions to the Spousal Exemption, Evidence Regarding Past Sexual History with Defendant, and Evidence Regarding Past Sexual History With Others. In these cases, different kinds of laws are associated with the different numerical values for the variable. The numbers are chosen to reflect the expectations discussed above regarding the effects different laws should have on the number of rapes reported to and deemed well founded by the police.\(^{183}\)

Laws that fit descriptions to which we have assigned higher numbers ought to cause higher reported rape counts. This does not take into account ways these laws may reduce counts to zero because they change the definition of the crime so it no longer matches the FBI’s definition of “forcible rape.” For the remaining kinds of provisions we use sets of dummy variables to treat the differences in the laws that we do not expect to match any simple ordering in terms of their effects on rape counts. For these provisions, we do have expectations about what the effects of the different laws should be, but those expectations are not strong enough to give us much confidence in a strong ordering. These provisions are indicated in Table 2 by the letter ‘D’ followed by a numeral in the code column. In each of these cases, we define a dummy variable that has the numerical value one if a state has legal provisions of that type in the referent year and has the value zero otherwise. All of the explanatory variables that represent legal provisions are defined at the state level, varying annually. All police agencies located in the same state have the same values for these variables.

\(^{183}\) Estimates using a slightly different regression model formulation showed that the categories of these variables are ordinally related to rape reports in a manner compatible with our chosen numerical scales.
### Table 2: Numerical Codes Used for the State Legal Provisions

<table>
<thead>
<tr>
<th>Description of the Legal Provision</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable 1: Definition of the Primary Offense</strong></td>
<td></td>
</tr>
<tr>
<td>Rape limited to vaginal penetration</td>
<td>D1</td>
</tr>
<tr>
<td>Rape limited to penetration</td>
<td>D2</td>
</tr>
<tr>
<td>Sexual assault (or other label, e.g. Sexual battery) limited to penetration</td>
<td>D3</td>
</tr>
<tr>
<td>Sexual assault includes penetration and touching</td>
<td>D4</td>
</tr>
<tr>
<td><strong>Variable 2: Single Continuum of Sex Crimes?</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>No, but has some degree structure</td>
<td>3</td>
</tr>
<tr>
<td>Has single continuum except for crimes involving minors</td>
<td>6</td>
</tr>
<tr>
<td>Yes透</td>
<td>8</td>
</tr>
<tr>
<td><strong>Variable 3: Criminalization of Nonconsensual Sexual Contacts</strong></td>
<td></td>
</tr>
<tr>
<td>Neither nonconsensual penetration or touching is a crime</td>
<td>D1</td>
</tr>
<tr>
<td>Nonconsensual penetration only is a crime</td>
<td>D2</td>
</tr>
<tr>
<td>Nonconsensual touching only is a crime</td>
<td>D3</td>
</tr>
<tr>
<td>Both nonconsensual penetration and touching are crimes</td>
<td>D4</td>
</tr>
<tr>
<td><strong>Variable 4: Gender of Offender and Victim</strong></td>
<td></td>
</tr>
<tr>
<td>Male offender and female victim</td>
<td>D1</td>
</tr>
<tr>
<td>Male offender and female victim except for crimes involving children; crimes involving children are sex neutral</td>
<td>D2</td>
</tr>
<tr>
<td>Male offender and male or female victim</td>
<td>D3</td>
</tr>
<tr>
<td>Male offender and female victim for rape; all other crimes gender-neutral</td>
<td>D4</td>
</tr>
<tr>
<td>Gender neutral terminology for both offender and victim</td>
<td>D5</td>
</tr>
<tr>
<td><strong>Variable 5: Spousal Exemptions</strong></td>
<td></td>
</tr>
<tr>
<td>Statutory silence on spousal or statutory exemption for all crimes</td>
<td>0</td>
</tr>
<tr>
<td>Statutory exemption for some crimes, including rape</td>
<td>2</td>
</tr>
<tr>
<td>Statutory exemption for rape only</td>
<td>3</td>
</tr>
<tr>
<td>Statutory exemption for some crimes, but not statutory exemption for rape with force, injury, etc.</td>
<td>6</td>
</tr>
<tr>
<td>Statutory removal of previous exemption or special law for spousal offense</td>
<td>7</td>
</tr>
<tr>
<td>Statutory provision allowing spousal prosecution for all crimes</td>
<td>8</td>
</tr>
<tr>
<td><strong>Variable 6: Exceptions to the Spousal Exemption</strong></td>
<td></td>
</tr>
<tr>
<td>No exceptions to the exemption, or statutory silence</td>
<td>0</td>
</tr>
<tr>
<td>Not applicable if living apart and legal/written agreement</td>
<td>3</td>
</tr>
<tr>
<td>Not applicable if living apart or legal/written agreement</td>
<td>5</td>
</tr>
<tr>
<td>No statutory exemptions</td>
<td>8</td>
</tr>
</tbody>
</table>
### Table 2 (cont’d): Numerical Codes Used for the State Legal Provisions

<table>
<thead>
<tr>
<th>Description of the Legal Provision</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable 7: Status of Cohabitants</strong></td>
<td></td>
</tr>
<tr>
<td>Exemption extends to cohabitants</td>
<td>D1</td>
</tr>
<tr>
<td>Exemption does not extend to cohabitants</td>
<td>D2</td>
</tr>
<tr>
<td>Statutory silence on spousal exemption</td>
<td>D3</td>
</tr>
<tr>
<td><strong>Variable 8: Evidence Regarding Past Sexual History with Defendant</strong></td>
<td></td>
</tr>
<tr>
<td>No rape evidence reform statute or admissible without hearing</td>
<td>0</td>
</tr>
<tr>
<td>Admissible with hearing for some purposes; without hearing for other purposes</td>
<td>1</td>
</tr>
<tr>
<td>Admissible with hearing</td>
<td>2</td>
</tr>
<tr>
<td>Admissible without hearing only to prove consent or only to prove credibility; inadmissible for other purposes</td>
<td>4</td>
</tr>
<tr>
<td>Admissible with hearing only to prove consent or only to prove credibility; inadmissible for other purposes</td>
<td>8</td>
</tr>
<tr>
<td><strong>Variable 9: Evidence Regarding Past Sexual History with Others</strong></td>
<td></td>
</tr>
<tr>
<td>No rape evidence reform statute or admissible without hearing</td>
<td>0</td>
</tr>
<tr>
<td>Admissible with hearing for consent without hearing for other purposes</td>
<td>1</td>
</tr>
<tr>
<td>Admissible with hearing</td>
<td>2</td>
</tr>
<tr>
<td>Inadmissible for consent; admissible without hearing for other purposes</td>
<td>3</td>
</tr>
<tr>
<td>Admissible with hearing for consent, credibility or fabrication; inadmissible for other purposes</td>
<td>4</td>
</tr>
<tr>
<td>All inadmissible except evidence of prior untruthful allegations—no hearing required</td>
<td>5</td>
</tr>
<tr>
<td>Admissible with hearing to show source of semen, etc., and either consent or ulterior motive; inadmissible for credibility</td>
<td>5</td>
</tr>
<tr>
<td>Admissible only to show source of semen, etc., past false allegations—hearing required</td>
<td>6</td>
</tr>
<tr>
<td>Admissible with hearing to show consent; inadmissible for other purposes</td>
<td>6</td>
</tr>
<tr>
<td>Admissible only to show source of semen, etc.—hearing required</td>
<td>7</td>
</tr>
<tr>
<td>All inadmissible except evidence about the particular fact on trial—hearing required</td>
<td>7</td>
</tr>
<tr>
<td>All evidence inadmissible</td>
<td>8</td>
</tr>
<tr>
<td><strong>Variable 10: Evidence Regarding Past Sexual History on Cross Exam</strong></td>
<td></td>
</tr>
<tr>
<td>Admissible without hearing, no rape evidence reform statute or statutory silence</td>
<td>D1</td>
</tr>
<tr>
<td>Admissible with hearing</td>
<td>D2</td>
</tr>
<tr>
<td>Admissible with hearing to show source of semen, etc.</td>
<td>D3</td>
</tr>
<tr>
<td>Inadmissible</td>
<td>D4</td>
</tr>
<tr>
<td><strong>Variable 11: Mistake of Incapacity Defense</strong></td>
<td></td>
</tr>
<tr>
<td>Specific defense available</td>
<td>D1</td>
</tr>
<tr>
<td>General mistake defense available</td>
<td>D2</td>
</tr>
<tr>
<td>Statutory silence</td>
<td>D3</td>
</tr>
<tr>
<td>No defense available</td>
<td>D4</td>
</tr>
</tbody>
</table>
To support our estimates of nationwide trends over time we define a set of dummy variables so that each has the value one in a particular year and zero in all the others.

**VIII. STATISTICAL ANALYSIS RESULTS**

The statistical analysis shows that more liberal and feminist-oriented legal provisions during the years 1970-91 are for the most part associated with higher numbers of "actual rapes." The effects of laws on "actual rapes" are mostly in line with reformers' intentions. The principal exceptions are some of the changes that redefined the crime in ways departing from the FBI's definition of "forcible rape." Our corrections for censoring do not completely remove the negative effects associated with those changes. It may be that those reforms truly reduced, rather than increased, the number of "actual rapes." When we analyze the effect of rape law reform on the number of "clearances," however, the picture becomes more complicated and, from the perspective of reform, more mixed.

The effects state laws had on "actual rapes," including the apparent distortions due to clashing definitions of the crime, can be seen first in Table 3, which reports the parameter estimates obtained for the two regression specifications for the counts of "actual rapes," along with the standard errors of the coefficient parameter estimates.\(^\text{184}\) For the differences in the laws that we measure as a set of dummy variables, the display of coefficient estimates includes an em dash (—) to indicate which provision is being used as the reference category in the regression.\(^\text{185}\)

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184. Estimation for the probit regression is by maximum likelihood, and for the compound symmetry regression by restricted maximum likelihood. We used PROC LOGISTIC of SAS version 6.09 to compute the probit regressions and PROC MIXED to compute the regressions with compound symmetry.

185. Because both regression specifications include a constant (the intercept), the reference category corresponds to the dummy variable in the set that is omitted from the regression. Each coefficient estimate shown for a particular type of law in a set of dummy variables represents the difference in the expected value of the linear predictor (i.e., either \(E_y\) or \(E \log w^*\)) when the law has that definition as opposed to the one being used as the reference category.
Table 3: Regression Models for Effects of Laws on “Actual Rapes” (Laws Parameters)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Probit$^d$</th>
<th></th>
<th>Compound Symmetry$^d$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>coef</td>
<td>SE</td>
<td>coef</td>
</tr>
<tr>
<td><strong>Primary Offense Definition</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal Penetration Only</td>
<td>-.049</td>
<td>.022</td>
<td>.147</td>
</tr>
<tr>
<td>Penetration Only</td>
<td>-.434</td>
<td>.025</td>
<td>-.093</td>
</tr>
<tr>
<td>Assault is Penetration</td>
<td>-.295</td>
<td>.034</td>
<td>-.090</td>
</tr>
<tr>
<td>Assault is Penetration &amp; Touching</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Continuum of Sex Crimes?</td>
<td>.051</td>
<td>.0042</td>
<td>.031</td>
</tr>
<tr>
<td><strong>Nonconsensual Sexual Contacts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Touching Only</td>
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<td>.019</td>
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<td>Both Penetration &amp; Touching</td>
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<td>.0028</td>
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<td>.0033</td>
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<td><strong>Status of Cohabitants</strong></td>
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<td>.044</td>
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<td>Statutory Silence</td>
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<td>.0028</td>
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<td>Past History with Others</td>
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<td><strong>Past History Cross Examination</strong></td>
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<td>Adm. with hearing to show source</td>
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<td><strong>Mistake of Incapacity Defense</strong></td>
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<td>Specific Defense Available</td>
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<td>-1.282</td>
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Table 3 (cont’d): Regression Models for Effects of Laws on “Actual Rapes” (Years Parameters)

<table>
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<tr>
<th>Variable</th>
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<th>Compound Symmetryb</th>
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<td>-.1024</td>
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<td>Year 73</td>
<td>-.241</td>
<td>-.883</td>
</tr>
<tr>
<td>Year 74</td>
<td>-.196</td>
<td>-.797</td>
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<td>Year 75</td>
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<td>-.782</td>
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<td>Year 76</td>
<td>-.152</td>
<td>-.720</td>
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<tr>
<td>Year 77</td>
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<td>-.542</td>
</tr>
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<td>Year 79</td>
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<tr>
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<td>-.395</td>
</tr>
<tr>
<td>Year 81</td>
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</tr>
<tr>
<td>Year 82</td>
<td>.018</td>
<td>-.389</td>
</tr>
<tr>
<td>Year 83</td>
<td>-.034</td>
<td>-.404</td>
</tr>
<tr>
<td>Year 84</td>
<td>.012</td>
<td>-.305</td>
</tr>
<tr>
<td>Year 85</td>
<td>-.052</td>
<td>-.293</td>
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<tr>
<td>Year 86</td>
<td>-.027</td>
<td>-.273</td>
</tr>
<tr>
<td>Year 87</td>
<td>-.051</td>
<td>-.251</td>
</tr>
<tr>
<td>Year 88</td>
<td>-.110</td>
<td>-.271</td>
</tr>
<tr>
<td>Year 89</td>
<td>-.039</td>
<td>-.158</td>
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<tr>
<td>Year 90</td>
<td>.070</td>
<td>-.027</td>
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<tr>
<td>Year 91</td>
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<td>—</td>
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<tr>
<td>Intercept</td>
<td>1.396</td>
<td>-2.004</td>
</tr>
<tr>
<td>Mills ratio</td>
<td>1.092</td>
<td>.272</td>
</tr>
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</table>

a Probit regression of the probability that the count of “actual rapes” is positive. Maximum likelihood estimates. $N = 72,316$ agency-years. 
$-2 \log (likelihood) = 98530.8 - 93742.3 = 4788.5$ with 45 degrees of freedom.

b Compound symmetry regression of the natural logarithm of the count of “actual rapes” (per 1000 people), given that the count is positive. Estimates obtained by restricted maximum likelihood estimation of equation (1). 
$N = 41724$ agency-years. REML log likelihood $= -38897.2$. $\hat{\sigma}^2 = .309$.
$\hat{\tau}_0^2 = .366$. $\hat{\tau}^2 = .471$. $\hat{\tau}_0^2 = .864$.

The compound symmetry regression shows that more feminist, liberal laws generally are associated with significantly higher per capita counts of “actual rapes” than traditional, conservative provisions. The coefficient estimates show that the count is higher if: sex crimes are defined on a single continuum rather than as a collection of separate and distinct offenses; spouses are subject to prosecution as opposed to exempt from prosecution; cohabitants are not exempt from prosecution; there are restrictions or prohibitions on the admissibility at trial of evidence about the victim’s past sexual history with the defendant or, on cross-examination, about the victim’s past sexual history generally; or there are...
limits on use at trial of a mistake of incapacity defense (the estimates are even higher if such a defense is not allowed). Limiting the admissibility of evidence about the victim's past sexual history with persons other than the defendant on direct-examination does not increase the number of "actual rapes," however, and may even somewhat decrease it.

Laws that changed the definition of the crime to be more inclusive and more oriented toward lack of consent as the crucial feature of "rape" show negative rather than positive effects on the counts of rapes. Counts are higher if the primary definition of the offense is restricted to vaginal penetration rather than expanded to include other kinds of penetration or both penetration and touching. Counts are lower when the laws more strongly emphasize lack of consent by criminalizing nonconsensual touching. Counts are lower if the crime is defined in a gender-neutral manner rather than in terms of a male offender and a female victim, but the picture for laws concerning gender is not entirely clear. Counts are higher if the law explicitly allows both male and female victims rather than being completely neutral about gender. But the difference between explicitly allowing for both male and female victims and limiting the crime to a male perpetrator and a female victim is not statistically significant.

These negative effects may reflect errors in reporting that our correction for censoring did not overcome. The "probit" regression results in Table 3 (for whether any "actual rapes" were reported at all) show strong signs of censoring for the same kinds of laws. When the law defines either rape or sexual assault to be limited to penetration, but does not limit the crime to vaginal penetration as does the FBI's definition, the probability of observing a positive count of "actual rapes" is lower than when rape means only vaginal penetration. Reductions in "actual rapes" also occur when the laws criminalize nonconsensual sexual contacts: the probability is lower when the criminalized contact includes nonconsensual touching, and it is substantially lower when both nonconsensual penetration and touching are crimes.

Laws that move in the direction of gender-neutral definitions of sex crimes also tend to reduce the probability of observing any "actual rapes" at all, although the effects are not as consistent for such changes as for the preceding kinds of redefinition. The probability of a positive count is slightly lower when statutes use gender-neutral terminology for both offender and victim than when the law specifies the offender as male and the victim as female or when the offender is defined as male and the victim can be either female or male. The probability is much lower when the law specifies exceptions to the male offender/female victim definition when children are involved, but such laws existed in only one state within the study period.

Laws that change the definition of the crime by reducing or eliminating exemptions from prosecution for spouses or cohabitants do not decrease the probability of observing positive counts. Indeed, they increase it. Changes of this kind should not produce artificial reductions in
the apparent count of rapes, because they do not introduce conflicts with the FBI's definition of "forcible rape."

Table 4 reports coefficient parameter estimates and standard errors for the beta-binomial model of "clearances." To facilitate interpretation, Table 5 shows expectations and standard deviations for the probability that an "actual rape" is cleared by arrest under various configurations of state laws. Table 5 shows expectations only for variables for which at least one of the estimated coefficients is statistically significant.

Table 4: Beta-binomial Model for Effects of State Laws on "Clearance" (Laws Parameters)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\xi$ coefficients</th>
<th>$\psi$ coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef</td>
<td>SE</td>
</tr>
<tr>
<td>One</td>
<td>1.282</td>
<td>.208</td>
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<tr>
<td>Primary Offense Definition</td>
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<tr>
<td>Vaginal Penetration Only</td>
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<td>.063</td>
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<tr>
<td>Penetration Only</td>
<td>.465</td>
<td>.077</td>
</tr>
<tr>
<td>Assault is Penetration</td>
<td>-.166</td>
<td>.104</td>
</tr>
<tr>
<td>Assault is Penetration &amp; Touching</td>
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<td></td>
</tr>
<tr>
<td>Single Continuum of Sex Crimes?</td>
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<td>.013</td>
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<tr>
<td>Nonconsensual Sexual Contacts</td>
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<td></td>
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<tr>
<td>Neither</td>
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<td>.120</td>
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<tr>
<td>Penetration Only</td>
<td>-.024</td>
<td>.156</td>
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<tr>
<td>Touching Only</td>
<td>-.076</td>
<td>.117</td>
</tr>
<tr>
<td>Both Penetration &amp; Touching</td>
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<td></td>
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<tr>
<td>Gender of Offender and Victim</td>
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<td></td>
</tr>
<tr>
<td>Male Offender Female Victim</td>
<td>-.091</td>
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<td>Male Off. Female Victim Ex.</td>
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<td>Child</td>
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<td>Male or Female Victim</td>
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<td>Male Off. Female Victim for Rape</td>
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<td>Spousal Exemptions</td>
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<td>Exceptions to Spousal Exemption</td>
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<td>Status of Cohabitants</td>
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<td>Cohabitants Exempt</td>
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<td>Cohabitants Not Exempt</td>
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<tr>
<td>Statutory Silence</td>
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<tr>
<td>Past History with Defendant</td>
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<td>.008</td>
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<tr>
<td>Past History with Others</td>
<td>-.044</td>
<td>.010</td>
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</table>

186. Estimation is by maximization of the logarithm of the marginal likelihood of equation (3), using a Gauss-Newton algorithm.

187. The expectations are $E(p | \xi, \psi)$ and standard deviations are $\sqrt{\text{Var}(p | \xi, \psi)}$.

188. The expected value labeled One in Table 4 corresponds to the set of legal provisions indicated by the em dashes in Table 4 for the sets of dummy variables and to the provisions measured by values of zero for the other variables.
Table 4 (cont’d): Beta-binomial Model for Effects of State Laws on “Clearances” (Laws and Years Parameters)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\xi$ coefficients$^a$</th>
<th>$\psi$ coefficients$^b$</th>
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</thead>
<tbody>
<tr>
<td>Past History Cross Examination</td>
<td>Coef</td>
<td>SE</td>
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<td>Statutory Silence</td>
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<td>.179</td>
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<tr>
<td>Admissible with hearing to show source</td>
<td>-.473</td>
<td>.180</td>
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<tr>
<td>Adm. with hearing to show source</td>
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<td>.274</td>
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<tr>
<td>Inadmissible</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Mistake of Incapacity Defense</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Specific Defense Available</td>
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<td>.275</td>
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<tr>
<td>General Mistake Defense</td>
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<td>.295</td>
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<tr>
<td>Statutory Silence</td>
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<td>.279</td>
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<tr>
<td>No Defense Available</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>$\xi$ Coef</th>
<th>SE</th>
<th>$\psi$ Coef</th>
<th>SE</th>
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<td>.127</td>
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<td>Year 77</td>
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<td>Year 91</td>
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</tbody>
</table>

Note: Estimate obtained by maximizing the marginal likelihood of equation (3), a beta-binomial model with correction for censoring. 
$N = 41,724$ agency-years. log(likelihood) = $-535326.09$.

$^a$ Coefficients of $\xi_{it} = \exp\{\alpha_0 + \sum_{j=1}^{K} \alpha_j x_{jit}\}$.

$^b$ Coefficients of $\psi_{it} = \exp\{\beta_0 + \sum_{j=1}^{K} \beta_j x_{jit}\}$.
### Table 5: Probability that an Actual Rape is Cleared by Arrest under Various State Laws

<table>
<thead>
<tr>
<th>Legal Provision</th>
<th>Expected Probability&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Standard Deviation&lt;sup&gt;b&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>Reference Provisions</td>
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<td></td>
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<tr>
<td>Single Contin. vs. Separate Distinct Offenses</td>
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<td>.189</td>
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<tr>
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<td>.539</td>
<td>.212</td>
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<tr>
<td>Touching Only</td>
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<tr>
<td>Gender of Offender and Victim (vs. Gender Neutral)</td>
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<td>Male Offender and Female Victim</td>
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<tr>
<td>Male Offender and Female Victim Ex. Child</td>
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<tr>
<td>Gender Neutral</td>
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<td>Spousal Exemptions</td>
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<td>Prosecution for All Crimes vs. Exemption for All Crimes</td>
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<tr>
<td>Exceptions to Spousal Exemption</td>
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<tr>
<td>No Spousal Exemption vs. no Exceptions to Exemption</td>
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<tr>
<td>Status of Cohabitants (vs. Statutory Silence)</td>
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<td>Cohabitants Exempt</td>
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<tr>
<td>Cohabitants Not Exempt</td>
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<tr>
<td>Past History with Defendant</td>
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</tr>
<tr>
<td>Admissible with Hearing for Consent or Credibility Only vs. No Evidence Statute</td>
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<td>.153</td>
</tr>
<tr>
<td>Past History with Others</td>
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<td></td>
</tr>
<tr>
<td>All Evidence Inadmissible vs. No Evidence Statute</td>
<td>.625</td>
<td>.215</td>
</tr>
<tr>
<td>Past History Cross Examination (vs. Inadmissible)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admissible without Hearing</td>
<td></td>
<td></td>
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<tr>
<td>No Evidence Statute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admissible with Hearing</td>
<td>.649</td>
<td>.226</td>
</tr>
<tr>
<td>Admissible with Hearing to Show Source of Semen, etc.,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past False Allegations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mistake of Incapacity Defense (vs. No Defense Available)</td>
<td></td>
<td></td>
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<tr>
<td>Specific Defense Available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Mistake Defense</td>
<td>.793</td>
<td>.165</td>
</tr>
<tr>
<td>Statutory Silence</td>
<td>.716</td>
<td>.144</td>
</tr>
</tbody>
</table>

<sup>a</sup> Beta-binomial model expected probability, $E(p | \xi, \psi) = \frac{\xi}{(\xi + \psi)}$, using the estimates in Table 4. A value is shown for variable $x_j$ only when at least one of the estimates $\hat{x}_j$ or $\hat{\beta}_j$ is statistically significant at the .05 (two-tailed) test level.

Probabilities are computed with all the year dummy variables set to zero, so the values are the expected values for 1991.
Expanding the definition of the crime significantly increased the probability that an “actual rape” led to an arrest. Recall that in the beta-binomial model the probability that an “actual rape” is cleared by arrest varies randomly across the police agencies in each state in each year. Table 5 shows that the expected value of the probability (i.e., the mean of the random distribution of probabilities) is higher when the offense is defined only in terms of vaginal penetration compared to when the offense is defined to include all types of penetration and touching. But the expected probability is higher when both penetration and touching are criminalized as nonconsensual contacts than when neither kind of contact is treated as criminal. The best way to interpret these effects is to consider the combined effect of both kinds of definitional broadening. Doing so, we find that the expected probability of arrest when the primary offense is defined as vaginal penetration and when nonconsensual contacts are not criminalized is .590, compared to the value of .632 obtained under the broadest definitions. Furthermore, the standard deviation of the probability is larger under the narrower definitions: sdev(p) = .230, compared to the value of .186 obtained under the broadest definitions. These results mean that under the broader definitions of the crime, arrest is more likely and there is less variation in outcomes across agencies. When, in addition, sex crimes are defined along a single continuum rather than in terms of a collection of separate, distinct offenses, the expected probability of arrest is .681, significantly higher.

Variations in the status of cohabitants are the only other legal provisions that occurred in many states and produced substantial differences in the probability of arrest. The expected probability of arrest is lower when cohabitants are exempt from prosecution than when statutes say nothing about cohabitants (.586 versus .632), but it is even lower when cohabitants are not exempt from prosecution (.512). Variations in cohabitants’ status did not significantly affect the variability of arrest outcomes across agencies.

IX. CONCLUSION

The changes in rape laws have had many of the positive effects reformers sought in the 1970s. Feminist reformers demanded change in the laws because many did not feel that women’s experiences were being accurately reflected. In the area of rape reform, the reality of women’s experiences as rape victims has been increasingly acknowledged by the law. The trends in rape law reform show that the definition of rape has moved away from “unlawful carnal knowledge of a woman by force and against

\[ \text{sdev}(p | \xi, \psi) = \sqrt{\xi \psi / \left( \xi + \psi \right)^2 \left( \xi + \psi + 1 \right)} \]

189. See BROWNMILLER, supra note 13, at 377-79.
her will." Many state statutes are beginning to encompass a woman's reality by extending the definition of rape to incorporate more types of assault and to include more victims, by criminalizing nonconsensual sexual contact, by allowing prosecution in cases where the victim knows the accused (spouse, cohabitant), by limiting the use of evidence of the victim's prior sexual history, and by restricting the availability of a mistake of incapacity defense. Such reforms treat women more as autonomous beings whose word—"no"—is to be heard and respected. These reforms place women's reality and experience into the law.

The effects of reform have not been limited to the symbolic ones achieved through changes in legal doctrine. This study shows that changes in rape law have had real, instrumental effects. Our statistical analysis shows that defining sex crimes on a single continuum, subjecting spouses and cohabitants to prosecution, limiting the admissibility at trial about the victim's past sexual history with the defendant or about the victim's past sexual history on cross-examination, and denying a mistake of incapacity defense all significantly increased the number of "actual rapes." Broader definitions of the crime that emphasize consent more than force increased the chances that a rape would lead to an arrest and reduced the variability of arrest outcomes across police agencies.

Nevertheless, where changes in laws did not increase the count of "actual rapes" as they moved in a feminist-oriented direction, there are indications that the effects may still be distorted by misreporting due to the FBI's limited definition of rape, notwithstanding our attempt to make statistical corrections. It is of course possible that the reductions in rape counts that are apparently due to legal reforms are in fact reflecting success in reducing the true incidence of rape. It could be that the institution of broader and more consent-oriented definitions of the crime somehow deterred potential perpetrators. Unfortunately, the data available to us do not allow us to test this possibility.

This study departs from previous social science work that has examined rape law reform. One significant departure is that we have looked at different aspects of reform across the nation rather than at a particular state or only a few states, and our examination spans a period of 22 years rather than only a few years before and after a particular reform. The large-scale, relatively disaggregated panel design of our data collection made it possible for us to adjust statistically for national trends and for exogenous, permanent differences between police agencies. Unlike other studies, we have found significant positive effects due to reforms in particular legal provisions.

190. One approach would be to use counts of "unfounded" rape incidents to test whether the numbers of both actual and unfounded counts varied with different laws. We cannot implement such tests because the data assembled by Pierce et al., supra note 170, do not include "unfounded" counts, and the FBI data in ICPSR study number 9028, supra note 170, do not include "unfounded" counts until 1983. Furthermore, inspection suggests that "unfounded" counts for the years after 1983 are of questionable reliability. Another idea would be to use National Crime Survey data to measure rape victims' reports, but the absence of geographical information in the data distributed to the public makes it impossible to correlate incident counts with state laws.
IX. APPENDIX A—FIGURES

Figure 1: Definition of the Primary Offense

- **Vaginal Penetration Only**
  - Year: 70, 75, 80, 85, 90
  - Number of States: 0, 10, 20, 30, 40, 50

- **Penetration Only**
  - Year: 70, 75, 80, 85, 90
  - Number of States: 0, 10, 20, 30, 40, 50

- **Assault Includes Penetration & Touching**
  - Year: 70, 75, 80, 85, 90
  - Number of States: 0, 10, 20, 30, 40, 50

- **Assault Is Penetration Only**
  - Year: 70, 75, 80, 85, 90
  - Number of States: 0, 10, 20, 30, 40, 50
Figure 2: Single Continuum?

- No, Separate Distinct Offenses
- No, But Some Degree Structure
- Single Except for Minors
- Yes, Single Continuum
Figure 3: What Nonconsensual Contact is Criminal?
Figure 4: Gender of Offender and Victim

- Male Offender, Female Victim
- Male Offender, Female Victim, Except Children
- Male Offender, Male or Female Victim
- Gender Only for Rape
- Gender Neutral

The graphs illustrate the number of states over the years in categories of gender and victim types.
Figure 5: Spousal Exemptions?

- **Statutory Silence**
- **Exemption for All Crimes**
- **Some Crimes Including Rape**
- **Rape Only**
- **None for Rape with Force or Injury**
- **Prosecution for All Crimes**
Figure 6: Exceptions to Spousal Exemptions?

- **Statutory Silence**
  - No Exceptions to Exemption
  - Living Apart and Written Agreement
  - No Spousal Exemptions
Figure 7: Cohabitant Exemptions

Cohabitants Exempt

Cohabitants Not Exempt

Statutory Silence
Figure 8: Admissibility by Defendant of Evidence Regarding Past Sexual Conduct with Defendant
Figure 9: Admissibility by Defendant of Evidence Regarding Past Sexual Conduct with Persons Other Than Defendant

No Reform or Admissible without Hearing

Admissible with Hearing for Consent, without for Other

Admissible with Hearing

Inadmissible for Consent, without Hearing for Other

Admissible under Special Circumstances

All Evidence Inadmissible
Figure 10: Admissibility on Cross-Examination of Evidence Regarding Past Sexual Conduct with Other Persons

Without Hearing or No Evidence Statute

With Hearing

With Hearing to Show Semen Source, etc.

Inadmissible
Figure 11: Mistake of Incapacity Defense

- **Specific Defense Available**
- **General Defense Available**
- **Statutory Silence**
- **No Defense Available**

Years: 70, 75, 80, 85, 90

Number of States: 0, 10, 20, 30, 40, 50

Years: 70, 75, 80, 85, 90
Figure A-1: Observed Count of "Actual Rapes," By State (Alabama-Hawaii), 1970-91
Figure A-2: Observed Count of “Actual Rapes,”
By State (Idaho-Minnesota), 1970-91
Figure A-3: Observed Count of "Actual Rapes," By State (Mississippi-Ohio), 1970-91
Figure A-4: Observed Count of "Actual Rapes," By State (Oklahoma-Washington), 1970-91
Figure A-5: Observed Count of "Actual Rapes," By State (West Virginia-Wyoming), 1970-91
Figure A-6: Empirical Kernel Density Plot for Positive Counts of “Actual Rapes,” 1970-91

Note: \( N = 41,724 \) agency-years.
X. APPENDIX B—LEGISLATIVE SOURCES USED FOR CODING


COLO. REV. STAT. §§ 18-3-401 to -410 (Repl. 1993).


IDAHO CODE §§ 18-6101 to -6107 (Michie 1948 & Supp. 1993)

ILL. ANN. STAT. ch. 720, para. 5/12-16; ch. 725, para. 5/115-13 (Smith-Hurd 1993).


IOWA CODE ANN. §§ 709.1 to .10 (West 1993).


BERKELEY WOMEN'S LAW JOURNAL


N.Y. PENAL LAW §§ 130.00 to .35, .55-.70 (McKinney 1987 & Supp. 1994).


OHIO REV. CODE ANN. §§ 2907.01 to .12 (Anderson 1992).


EFFECTS OF RAPE LAW REFORM


Wis. STAT. ANN. §§ 940.225(1)-(5), 970.03(4) (West 1982 & Supp. 1993).


Acts of Alabama:
1977 Acts No. 607 p. 812 §§ 2301-23330
1979 Acts No. 79-471 p. 862 § 1
1987 Acts No. 87-607 p. 1056 § 2
1988 Acts No. 88-339 p. 515

Session Laws of Alaska:
1978 Sess. Laws §§ 1-3 ch. 166
1980 Sess. Laws §§ 8-9 ch. 102
1982 Sess. Laws § 6 ch. 143
1983 Sess. Laws §§ 1-10 ch. 78
1985 Sess. Laws § 2 ch. 43
1988 Sess. Laws §§ 1-4 ch. 96
1989 Sess. Laws § 27 ch. 50

Session Laws of Arizona:
1965 Sess. Laws ch. 20 §§1-3
1977 Sess. Laws ch. 142 §63
1978 Sess. Laws ch. 201 §133
1982 Sess. Laws ch. 322 §§4-5
1983 Sess. Laws ch. 202 §§7-10
1985 Sess. Laws ch. 364 §16
1988 Sess. Laws ch. 301 §§1-2
1989 Sess. Laws ch. 199 §1 and ch. 364 S22
1990 Sess. Laws ch. 384 §§1-3

General Acts of Arkansas:
1971 Acts No. 828 § 1
1975 Acts No. 280 § 1801
1977 Acts No. 197 §§ 1-4
1981 Acts No. 620 § 12
1983 Acts No. 889 § 1
1985 Acts No. 281 § 2, No. 326 §§ 1-2, No. 327 § 1, No. 563 § 1,
No. 870 § 4, No. 919 §§ 1-2
1993 Acts No. 265 §§ 1-2, No. 935 §§ 1-4
Statutes of California:

1970 Stat. ch. 1301 p. 2405 § 1
1979 Stat. ch. 994 p. 3383 § 1
1980 Stat. ch. 587 p. 1595 § 1
1981 Stat. ch. 110 p. 843 § 1, ch. 849 p. 3270 § 1
1982 Stat. ch. 1113 p. 4013 § 1
1983 Stat. ch. 949 § 1, ch. 1193 p. 4031 § 1
1984 Stat. ch. 1634 § 1, ch. 1635 § 79.5
1985 Stat. ch. 283 § 1
1986 Stat. ch. 1299 § 1

Session Laws of Colorado:

1975 Sess. Laws 75 p. 627 § 1
1983 Sess. Laws 83 pp. 693, 697 §§ 1,2
1986 Sess. Laws 86 p. 770 § 6
1988 Sess. Laws 88 p. 712 § 17

Connecticut Public Acts:

1972 Acts 127 § 78 (Reg. Sess.)
1975 Acts 75-619 § 1 (Reg. Sess.)
1980 Acts 80-442 § 20 (Reg. Sess.)
1982 Acts 82-428 § 2 (Reg. Sess.)
1983 Acts 83-326 § 1 (Reg. Sess.)
1985 Acts 85-341 § 1 (Reg. Sess.)

Laws of Delaware:

11 Laws 1953 § 773
58 Laws 1972 ch. 497 § 1
59 Laws 1974 ch. 547 § 3
60 Laws 1976 ch. 416 § 1
61 Laws 1979 ch. 56, § 3
65 Laws 1984 ch. 494 § 1
66 Laws 1986 ch. 269 §§ 27,28

District of Columbia Statutes at Large:

1970 84 Stat. 600, Pub. Law 91-358, title II §204

Laws of Florida:

1971 Laws ch. 71-136 § 757
1972 Laws ch. 72-724 § 7
1974 Laws ch. 74-121 § 2
1975 Laws ch. 75-298 § 17
1977 Laws ch. 77-104 § 237
1983 Laws ch. 83-258 § 1
1984 Laws ch. 84-86 § 1
1989 Laws ch. 89-216 § 1
1990 Laws ch. 90-40 § 1, 90-174 § 5
Georgia Laws:
1968 Laws p. 1249 § 1
1978 Laws p. 3 § 1
1984 Laws p. 685 § 1, 1984 p. 1495 § 1
1985 Laws p. 283 § 1
1987 Laws p. 617 § 1
1990 Laws p. 1003 § 2
1992 Laws p. 6 § 16, p. 2131 § 1

Session Laws of Hawaii:
1986 Sess. Laws ch. 314 § 57
1987 Sess. Laws ch. 181 § 9
1991 Sess. Laws ch. 214 § 1

Session Laws of Idaho:
1972 Sess. Laws ch. 336 § 1 p. 844
1977 Sess. Laws ch. 208 § 1 p. 573

Laws of Illinois:
1983 Laws 83-1067 § 1
1983 Laws 83-1117 § 1
1985 Laws 85-651 § 1
1985 Laws 85-691 § 1
1985 Laws 85-1030 § 2
1985 Laws 85-1209 Art. 2, § 2-23
1985 Laws 85-1392 § 1
1985 Laws 85-1440 Art. 2, § 2-9

Acts of Indiana:
1976 Acts 1948 § 2
1977 Acts 340 § 36
1978 Acts 82 § 2
1981 Acts 301 § 1, 298 § 6
1983 Acts 320 § 23, 322 § 1
1984 Acts 16 § 19, 183 § 4

Acts and Joint Resolutions of the State of Iowa:
1976 Acts 66 ch. 1245 §§ 901-910
1977 Acts 67 ch. 147 § 12
1978 Acts 67 ch. 1029 §§ 47,48
1984 Acts 70 ch. 1188 § 1
1985 Acts 71 ch. 181 § 1
1989 Acts 73 ch. 138 § 3

Session Laws of Kansas:
1976 Sess. Laws ch. 162 § 1
Acts of Kentucky:
1974 Acts ch. 232 § 81
1986 Acts ch. 486 § 1
1988 Acts ch. 78 § 1, ch. 283 § 9
1990 Acts ch. 448 § 1
1992 Acts ch. 355 § 1

State of Louisiana Acts of the Legislature:
1978 Acts No. 239 § 1
1981 Acts No. 624 § 1, No. 707 § 1
1983 Acts No. 78 § 1
1984 Acts No. 568 § 1, No. 569 § 1, No. 579 § 1, No. 924 § 1
1985 Acts No. 287 § 1, No. 587 § 1

Laws of the State of Maine:
1963 Laws ch. 331 §§ 2-7
1969 Laws ch. 433 § 21
1975 Laws ch. 499 § 1, ch. 740 §§ 44-47
1979 Laws ch. 701 § 22
1981 Laws ch. 252 § 1
1983 Laws ch. 326 §§ 1-4, ch. 411
1985 Laws ch. 247 § 1, ch. 414 § 1, ch. 495 §§ 5-10, ch. 544, ch. 737 § A
1989 Laws ch. 400 § A13, ch. 401 § 1
1991 Laws ch. 457, ch. 569

Laws of Maryland:
1976 Laws ch. 573 §§ 1-2, ch. 574
1977 Laws ch. 290-4
1978 Laws ch. 146, ch. 205, ch. 223
1980 Laws ch. 118
1988 Laws ch. 6 § 1, ch. 433
1989 Laws ch. 189
1990 Laws ch. 587
1992 Laws ch. 22 § 1

Acts and Resolves of Massachusetts:
1955 Acts ch. 763 § 2
1966 Acts ch. 291
1973 Acts ch. 925 § 77
1974 Acts ch. 474 §§ 1-3
1977 Acts ch. 110
1980 Acts ch. 459 § 6
1983 Acts ch. 367

Public and Local Acts of the Legislature of the State of Michigan:
1974 Pub. Acts No. 266
EFFECTS OF RAPE LAW REFORM

Laws of Minnesota:
1975 Laws ch. 374 § 2
1977 Laws ch. 130 § 8
1978 Laws ch. 772 § 62
1979 Laws ch. 258 §§ 9-11
1980 Laws ch. 544 § 2
1981 Laws ch. 51 § 1
1982 Laws ch. 385 § 1, ch. 469 § 9
1983 Laws ch. 204 § 1
1984 Laws ch. 525 §§ 3, ch. 588 §§ 5,6, ch. 628 Art. 3 § 11
1985 Laws ch. 24 §§ 3,4, ch. 286 § 14, ch. 297 §§ 1-5
1986 Laws ch. 351 §§ 6,7, ch. 444
1987 Laws ch. 114 § 1, ch. 198 §§ 1-3, ch. 224, ch. 347
1988 Laws ch. 413
1989 Laws ch. 290
1992 Laws ch. 571 Art. 1 § 14

General Laws of Mississippi:
1974 Laws ch. 576 § 8
1977 Laws ch. 438, ch. 458 § 7
1980 Laws ch. 390
1985 Laws ch. 389 §§ 3,4
1993 Laws ch. 497 § 1

Laws of Missouri:
1977 Laws SB No. 60 p. 662
1980 Laws p. 497 § 1
1987 Laws HB No. 341 § A
1990 Laws HB Nos. 1370, 1037, 1084 § A
1991 Laws HB No. 566 § A

Laws of Montana:
1973 Laws ch. 513 § 1
1975 Laws ch. 2 § 1, ch. 129 § 1, ch. 405 § 2
1977 Laws ch. 94 § 1, ch. 359 §§ 15,16, ch. 584 § 10,
1979 Laws ch. 687 § 1
1981 Laws ch. 198 § 7
1985 Laws ch. 172 § 1, ch. 644 § 1
1991 Laws ch. 175 §§ 1,3, ch. 218 §§ 1,2, ch. 564 § 1, ch. 687 §§ 1-3,8

Laws of Nebraska:
1977 Laws 38 § 32
1978 Laws 701 § 1, LB 748 § 5
1984 Laws 79 §§ 1-3
1985 Laws 2 § 2
1991 Laws 23 § 1
Statutes of Nevada:
1967 Stat. p. 470
1973 Stat. pp. 95, 254, 1406
1975 Stat. p. 1141
1979 Stat. p. 572
1983 Stat. p. 205
1987 Stat. ch. 507 § 1 p. 1165
1991 Stat. ch. 16 § 1 p. 18, ch. 250 § 1 p. 612, ch. 304 § 1 p. 801,
ch. 389 § 14 p. 1007

Laws of the State of New Hampshire:
1975 Laws 302:1

Laws of New Jersey:
1978 Laws ch. 95 § 2C:14-1 to-7
1979 Laws ch. 178 § 26
1983 Laws ch. 249 § 1
1989 Laws ch. 228 § 2
1992 Laws ch. 8 § 1

Laws of New Mexico:
1975 Laws ch. 109 § 1
1979 Laws ch. 28 § 1
1981 Laws ch. 8 § 1
1987 Laws ch. 203 § 1
1991 Laws ch. 26 § 1
1993 Laws ch. 177 § 1

Laws of New York:
1965 Laws ch. 1030, ch. 1038 § 1
1975 Laws ch. 230 § 1
1977 Laws ch. 692 § 2
1978 Laws ch. 723 §§ 1,2
1981 Laws ch. 696 §§ 1,2
1982 Laws ch. 560 § 1
1983 Laws ch. 449 § 1
1984 Laws ch. 650 § 1
1987 Laws ch. 510 §§ 1,2
1988 Laws ch. 450 §§ 1,2

Session Laws of North Carolina:
1979 Sess. Laws ch. 682 § 1
1979 Sess. Laws ch. 1316 § 4 (2nd Sess.)
1981 Sess. Laws ch.106 §§ 1,2
1983 Sess. Laws ch. 175 §§ 4,10, ch. 720 § 4
1987 Sess. Laws ch. 742
EFFECTS OF RAPE LAW REFORM

Laws of North Dakota:
1973 Laws ch. 117 § 1
1975 Laws ch. 118 § 1
1977 Laws ch. 122 §§ 1-5, ch. 179 § 2
1983 Laws ch. 172 § 6, ch. 167 § 7
1985 Laws ch. 536 § 1, ch. 176 § 1
1987 Laws ch. 167 § 1, 168 § 1
1993 Laws ch. 121 § 1

State of Ohio: Legislative Acts Passed and Joint Resolutions Adopted:
1974 Laws 134 v. H. 511
1976 Laws 136 v. S. 144
1977 Laws 137 v. H. 134
1980 Laws 139 v. S. 199
1982 Laws 141 v. H. 475
1984 Laws 142 v. H. 51

Session Laws of Oklahoma:
1965 Sess. Laws ch. 149 § 1
1975 Sess. Laws ch. 19 § 1
1981 Sess. Laws ch. 325 § 1
1983 Sess. Laws ch. 41 § 1
1992 Sess. Laws ch. 168 § 2

Laws and Resolutions of Oregon:
1971 Laws ch. 743 §§ 104-10
1975 Laws ch. 461 § 1
1977 Laws ch. 844 § 1
1979 Laws ch. 489 § 1, ch. 744 § 7
1981 Laws ch. 549 § 3
1983 Laws ch. 41 § 2, ch. 500 § 1, ch. 564 § 1
1984 Laws ch. 134 § 1
1986 Laws ch. 179 § 3
1989 Laws ch. 359 §§ 1-4
1990 Laws ch. 224 § 2

Laws of Pennsylvania:
1966 Laws 84 § 1 (Spec. Sess. No. 3)
1971 Laws 118 No. 6 § 1
1972 Laws 1482 No. 334 § 1
1976 Laws 120 No. 53 § 1
1984 Laws 1210 No. 230 § 1
1990 Laws 6 No. 4 § 4

Public Laws of Rhode Island and Providence Plantations:
1979 Pub. Laws ch. 302 § 2
1980 Pub. Laws ch. 273 § 1
1981 Pub. Laws ch. 119 § 1
1984 Pub. Laws ch. 59 § 1, ch. 152 § 1, ch. 355 § 1
1986 Pub. Laws ch. 191 § 1
1987 Pub. Laws ch. 238 § 1
1988 Pub. Laws ch. 219
Acts and Joint Resolutions of South Carolina:
    1977 Acts No. 157 §§ 1-10
    1978 Acts No. 639 §§ 1-10
    1984 Acts No. 509
    1991 Acts No. 139 § 2

Laws of South Dakota:
    1972 Laws ch. 154 § 21
    1975 Laws ch. 44, ch. 169 §§ 1, 5
    1976 Laws ch. 158 § 22
    1977 Laws ch. 189 § 51
    1978 Laws ch. 158 § 10, ch. 937 § 10
    1980 Laws ch. 175
    1981 Laws ch. 176
    1982 Laws ch. 176 § 1
    1984 Laws ch. 165 § 1, ch. 167
    1985 Laws ch. 179, ch. 18 § 1
    1986 Laws ch. 181
    1988 Laws ch. 187
    1989 Laws ch. 194 § 2
    1990 Laws ch. 161 § 2, ch. 162 § 1
    1991 Laws ch. 24 § 8

Public Acts of the State of Tennessee:
    1975 Pub. Acts ch. 44 § 1
    1978 Pub. Acts ch. 937 § 10
    1989 Pub. Acts ch. 591 § 1
    1990 Pub. Acts ch. 980 § 3

General and Special Laws of the State of Texas:
    1965 Gen. Laws ch. 722
    1973 Gen. Laws ch. 399 § 2(c)
    1977 Gen. Laws ch. 262
    1979 Gen. Laws ch. 168 § 1
    1983 Gen. Laws ch 977

Laws of Utah:
    1973 Laws ch. 196 § 76-5-401
    1977 Laws ch. 86 § 1
    1979 Laws ch. 73 § 1
    1983 Laws ch. 88 § 16
    1984 Laws ch. 18 § 9
    1986 Laws ch. 31 § 1
    1988 Laws ch. 181 § 1
    1989 Laws ch. 255, ch. 259 § 1
    1991 Laws ch. 267 § 1
    1992 Laws ch. 64 § 1
Laws of Vermont:
1977 Acts & Resolves No. 51 §§ 2,3
1985 Acts & Resolves No. 83 § 1

Acts of the General Assembly of the Commonwealth of Virginia:
1960 Acts ch. 358
1972 Acts ch. 394
1975 Acts ch. 14, 15, 606
1981 Acts ch. 397
1982 Acts ch. 506
1986 Acts ch. 516

Laws of Washington:
1975 Laws 1st Ex. Sess. ch. 14 § 1, Ex. Sess. ch. 247 § 1
1979 Laws Ex. Sess. ch. 244 § 17
1981 Laws ch. 123 § 1, ch. 137 § 36
1982 Laws ch. 10 §§ 3, 18, ch. 192 § 11
1983 Laws ch. 73 § 1, ch. 118 § 1
1986 Laws ch. 131 § 1
1988 Laws ch. 145 § 1, ch. 146 § 3

Acts of the Legislature of West Virginia:
1976 Acts ch. 43
1984 Acts ch. 56, 1st Ex. Sess. ch. 11
1991 Acts ch. 41

Laws of Wisconsin:
1975 Laws ch. 184 § 5, ch. 421 § 470.1
1977 Laws ch. 173 § 19
1979 Laws ch. 24 § 1, ch. 25 § 1, ch. 175 § 44, ch. 221 § 842s-842t
1981 Laws ch. 89 § 2, ch. 308 § 2, ch. 310, ch. 311
1987 Laws ch. 245 § 1, ch. 332, ch. 352 §§ 5,31, ch. 403 §§ 235,256

Wyoming Statutes:
1982 Sess. Laws ch. 75 § 3
1983 Sess. Laws ch. 171 § 1
1984 Sess. Laws ch. 44 § 2