EXPLORING THE EFFECT OF RESOURCE AVAILABILITY AND THE LIKELIHOOD OF FEMALE-PERPETRATED HOMICIDES

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The research presented here examines the effect of legal and extralegal resources on the likelihood of female-perpetrated homicides. It looks at the relationship between gender-specific rates of partner homicide in the United States for 1976–79 and 1980–84, and the availability of legal and extralegal resources for abused women, using states as the unit of analysis. Results indicate that the availability of such resources is associated with a *decline* in the rates of female-, but not male-, perpetrated homicides in 1980–84, compared to the 1976–79 time period. These findings suggest that legal and extralegal interventions can provide nonviolent alternatives for victims of male partner abuse.

I. INTRODUCTION

Homicide in the United States is predominantly a male phenomenon. As a result, overall patterns of homicide may mask dimensions specific to women. Indeed, findings from recent regional and national studies suggest important motivational and situational differences between men's and women's involvement in homicide (e.g., Block, 1985; Browne and Flewelling, 1986; Browne and Williams, 1987; Daniel and Harris, 1982; Silverman and Mukherjee, 1987; Silverman and Kennedy, 1987a, b; Wilson and Daly, 1986).

Incidence patterns reveal significant differences in the nature of these events. Men are overwhelmingly the perpetrators of homicide in the United States; they show substantially higher rates of all types of homicide. In contrast, women rarely commit

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homicide. Further, male-perpetrated homicides primarily involve acquaintances and strangers. In contrast, when women do kill, the victim is most likely to be a male partner.

One situational factor that appears to lead to female-perpetrated homicide is women's inability or perceived inability to protect themselves from aggression by their male partners. Studies have found that female-perpetrated partner homicides are much more likely to be in self-defense (that is, in response to their partners' physical aggression and threat) than are male-perpetrated homicides (e.g., Chimbos, 1987; Daniel and Harris, 1982; Totman, 1978; Wilbanks, 1983; Wolfgang, 1967).[1] Since the mid-1970s, a number of states have attempted to provide women victimized by male aggression with resources such as counseling centers, shelters, and special police protection. In this article, we investigate whether the availability of resources that allow women to escape or to be protected from violent situations with partners is associated with a lower likelihood that women will commit partner homicides. If such an association exists, it should result in a measurable reduction in the *rates* of female-perpetrated partner homicide where legal and extralegal alternatives to violence are available.

Theoretically, an association between a reduction in female-perpetrated homicide and the existence of legal and extralegal resources for women could be produced by a number of processes. The tangible significance of such resources is that they provide concrete means for women threatened by male partners to pursue various options: (1) to seek protection for themselves and their children, such as emergency restraining orders against abuse and harassment or police removal of the abusive mate; (2) to employ more direct avenues of escape, such as shelters where they can hide from the abuser for short periods; (3) to utilize third-party interventions, such as support groups, crisis counseling, and legal aid, which give advice and encouragement in identifying effective nonviolent means of responding to threat or danger; and, in some areas, (4) to receive the benefits from court-mandated treatment programs that work directly with the abuser on his problem with violence.

Such resources may have symbolic as well as tangible significance. The past decade has seen extensive redefining of the act of assault by men on their female partners, from a perception of "domestic disturbances" as relatively trivial, nonserious matters, best left in the private domain and for the most part socially tolerated, to the current awareness of the incidence, prevalence, and severity of such assaults and view of that behavior as unacceptable (Browne, 1987). Thus the investment in support resources and the

[1] For discussions of defensive spousal homicides by women, see also Barnard *et al.* (1982) and Jones (1980).

presence of legal and extralegal sanctions against these assaults both provide a social statement that confirms victims' perceptions of the seriousness of such violence and may engender a sense of empowerment and alternatives.

The development of legal and extralegal supports has been spurred by a feminist-led battered women's movement (for a comprehensive history, see Schechter, 1982). It seems probable that the strength and visibility of the movement have had a positive effect on the ways in which women react to male aggression, independent of the tangible services the movement provides or has lobbied to bring into existence (e.g., Bowker, 1983).

II. MALE AGGRESSION AND FEMALE HOMICIDE

Many female-perpetrated homicides, particularly partner homicides, are substantially different acts than male-perpetrated homicides. Wolfgang's (1958) landmark study of criminal homicide in Philadelphia showed that 60 percent of the husbands killed by wives "precipitated" their own death—that is, they were the first to use physical force, strike blows, or threaten with a weapon—compared to only 9 percent (5 of 53) of wife victims.[2] Similarly, in a study of all men and women arrested for homicide in Dade County, Florida, during 1980, Wilbanks (1983) noted that the victims of female perpetrators were much more likely to have been the first to use force or threat, and thus to have precipitated the homicide event, than were the victims of male perpetrators.[3]

The association between male aggression and female homicide has also been documented in more specialized studies. For example, Chimbos (1978), studying interspousal homicides in Canada, reviewed available police records and found that nearly all women charged with the deaths of their mates had previously been assaulted by them. Totman (1978), in a study of women incarcerated for homicide in California, found that 93 percent of the women who had killed their partners reported they had experienced physical assault from those partners and that 67 percent said the homicide was in defense of themselves or a child. Similarly, in a pretrial study of women charged with homicide in Missouri, Daniel and Harris (1982) found that 75 percent of the women who had killed husbands said they had been physically abused by them prior to the lethal incident.[4]

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[2] These figures were based on provocation recognized by the courts and may not reflect the number of wives in the sample who had actually experienced physical abuse or threats from their husbands.

[3] See Silverman and Mukherjee (1987) and Wilson and Daly (1986) for similar conclusions based on Canadian data.

[4] This sample consisted of all women who were referred to a large state hospital in Missouri during a five-year period (1974–79) for psychiatric evaluation in relation to charges of homicide. This thus excludes women charged with homicide but not referred for evaluation and women for whom homicide charges were dropped due to mitigating circumstances.

Women often make many attempts to obtain outside intervention before committing spousal homicide. A 1976 study conducted at the Women's Correctional Center in Chicago revealed that 40 percent of the 132 women incarcerated for murder or manslaughter had killed partners who had repeatedly attacked them. All of the women who had killed abusive mates reported that they had called the police for help at least five times before taking lethal action, and many said the violence they endured became more, rather than less, severe after their attempts to obtain assistance (Lindsey, 1978). A review of police records in Detroit and Kansas City lends support to the self-reports of the Chicago women. In 90 percent of domestic homicides, police had responded to a disturbance call at the home at least once during the two years prior to the fatal incident, and in over half (54%) of the cases they had been called five or more times (Police Foundation, 1976; Sherman and Berk, 1984).

A. Legal and Extralegal Resources for Women

Recent investigations indicate that women in the United States are more likely to be assaulted, injured, raped, and killed by a male partner than by any other type of assailant (e.g., Finkelhor and Yllo, 1983; Langan and Innes, 1986; Lentzner and De Berry, 1980; Russell, 1982). Yet, although women's greatest risk of assault is from their partners, women have received little legal protection from this type of abuse. Until the late 1970s, in most states, assaults against wives were considered misdemeanors, even when the same actions would have been considered felonies if perpetrated against a stranger or an acquaintance instead of a wife.

In most of these same jurisdictions, police could not arrest on a misdemeanor charge unless they had witnessed a part of the action, and virtually no other legal recourse was available (Lerman, 1980; Lerman and Livingston, 1983; U.S. Commission on Civil Rights, 1978, 1982). A wife usually could not obtain a restraining order against a violent husband unless she was willing to file for divorce at the same time (e.g., Fleming, 1979; U.S. Commission on Civil Rights, 1978, 1982). Orders of protection were typically not available on an emergency basis and often carried no provisions for enforcement or penalties for violation. In some states, moreover, a single assault by a husband was not considered sufficient grounds for a divorce action (U.S. Commission on Civil Rights, 1978: 266–290). Marital rape exemptions excluded the sexual assault of women by their husbands from criminal statutes; and, until the mid-1970s, women who eventually killed their mates to protect themselves from harm or death found the traditional plea of self-defense unavailable.

Only since the mid-1970s have legal and extralegal resources become available to threatened or assaulted wives. The first facili-

ties to house women victims of a partner's violence were established between 1974 and 1976.[5] By 1982, the number of such shelters in the United States was estimated at between 300 and 700; these facilities were often full. For example, Schechter (1982: 12) noted that by 1981, the five New York City shelters were forced by inadequate space to turn away 85 out of every 100 women seeking refuge. Other resources, such as emergency crisis lines, counseling services, support groups, and victim advocacy for court proceedings, also became available during the late 1970s. Grassroots organizers and activists continued to educate their communities and legislators about the realities of violence against women, and media and other presentations began to heighten public awareness about assault of wives as a pervasive and serious problem in American society.

By 1980, forty-seven states had passed some form of domestic violence legislation (see Kalmuss and Straus, 1983). This legislation included provisions for strengthening protective restraining orders, for charging wife assault as a crime and for exercising warrantless arrest given probable cause, as well as mandatory arrest policies and court-mandated treatment for perpetrators of violence against wives. The emphasis of this legislation was on enforcing victims' rights, increasing victims' legal options, and protecting victims and those near them from further assault (Schechter, 1982: 159).

Although many of these legal changes suffered serious problems in implementation, the introduction of such alternatives has important ramifications for the prevention of female-perpetrated homicide. Although not *all* homicides committed by women against their male partners are in reaction to abuse or threat, effective legal and extralegal resources may prevent some killings that otherwise would occur in desperation. Browne (1987) studied women charged in the death or serious injury of abusive mates. These women had often endured years of assault and threat, and most reported that they had unsuccessfully searched for alternative solutions, killing only when they felt hopelessly trapped in a desperate situation from which they could see no practical avenue of escape. Almost all had sought police intervention, although during the period in which these women were living with their mates—from the mid-1960s to the late 1970s—legal and extralegal resources targeted for abused wives were either not available or were only just beginning to be put in place. Many of the women had attempted to leave their partners but in retaliation were even more seriously threatened or attacked. A few had actually been separated or divorced from their mates for up to two years yet

[5] See Schechter (1982) for a comprehensive discussion of the battered women's movement and resultant social change.

were still experiencing life-threatening violence and harassment before the final incident.

Most of these women had no prior history of violent or even illegal behavior, yet their attempts to survive with an increasingly assaultive and threatening mate—and their inability to find resources that would mitigate the danger—eventually led to their own acts of violence.[6]

B. Patterns of Variation

The lower rate homicides committed by women suggests that women are generally less likely than men to initiate a lethal act against another. Given alternatives to living with danger and threat, it seems likely that many women will utilize those alternatives rather than resort to violence. In addition, the availability of such alternatives, regardless of whether they are utilized, should mitigate against the perception of hopelessness and entrapment that appears to be critical in homicides committed by abused women. In analyzing the total number of one-on-one cases of murder and nonnegligent manslaughter in the United States between 1979 and 1984 by individuals over the age of eighteen, Browne and Flewelling (1986) found that the number of male partners killed by women actually *decreased* by over 25 percent. This sharp decline may reflect, at least in part, improved alternatives to violence for women in threatening or assaultive relationships.

Extending the prior analysis, Browne and Williams (1987) employed a percent change measure for rates of partner homicide from 1980 to 1984, compared to the rates for 1976 to 1979, and noted substantial state-to-state variation. For example, in thirty-seven of the fifty states, female-perpetrated homicides against husbands declined between the late 1970s and early 1980s, while in thirteen of the states they increased. In contrast, only twenty-one of the states showed a decrease in male-perpetrated spousal homicides, while such homicides increased in the other states. Overall patterns of lethality accounted for some of the changes, but the variance was not fully explained by changes in the total homicide rates within the states.

One possible reason for the variation among the states is the different state responses to women at risk. The current study examines gender-specific homicide to assess the relationship between the availability of resources and domestic violence legislation for women at risk and rates of female-perpetrated partner homicide. We predict that differences in the rate of female-perpetrated

[6] See Totman (1978: 2), who found that in her sample a major contributing factor to female-perpetrated homicides was the women's perceived lack of alternatives to an "overwhelming and entrapping life situation"; she noted that, as attempts to seek intervention failed, the "situation seemed to become even more limited in its possibilities for modification . . . [and] more than ever a 'trap' from which there was no escape."

homicide will be inversely associated with the differences in the availability of such resources and legislation. In short, in the face of severe male aggression, the rate of female perpetrated partner homicide will be reduced when jurisdictions provide more avenues of escape or legal protections or both.

III. DATA AND VARIABLES

We obtained data on homicides from the Comparative Homicide File, or CHF (Williams and Straus, 1987), which consists of incident files drawn from the Supplementary Homicide Report (SHR) and collected by the FBI as a part of its Uniform Crime Reporting (UCR) program. The CHF includes rates for various types of homicide based on characteristics of victims or offenders, situational circumstances, means used to kill (for example, weapon), and the relationship between victims and offenders. Other data on the social, economic, and demographic characteristics of states are also included.

A. Sample of Incidents

The SHR classifies homicides into three categories: (1) murder and nonnegligent manslaughter, (2) negligent manslaughter, and (3) justifiable homicide. Our research focuses exclusively on murder and nonnegligent manslaughter, because they represent the most common forms of homicide—94.4 percent of all known incidents in the United States during 1980–84. Hereinafter, the term *homicide* will be used to denote incidents of murder and nonnegligent manslaughter.

The sample is restricted to one-on-one cases of partner homicide, meaning those incidents involving spouses, ex-spouses, common-law partners, and girl- or boyfriends. The focus on one-on-one homicide is important because previous descriptive analyses of homicide have shown that the age, sex, and race and ethnic composition, as well as the situational circumstances of incidents involving multiple offenders or victims or both, tend to be different from one-on-one events (e.g., Block, 1985). The implication is that the causal forces that produce such incidents may also be substantially different. Hence, these two kinds of homicides should be analyzed separately until the crucial points of similarity and difference can be clearly identified.[7]

B. Rate Calculation

The homicide rate calculations for this study are based on homicides from the entire 1980–84 period, rather than individual years. This procedure reduces the influence of random fluctua-

[7] Incidents involving multiple offenders or victims or both are relatively infrequent, representing about 11% of all known homicides in the United States during 1980–84.

tions in year-to-year estimates and avoids unreliable rates based on low frequencies.

The rates were adjusted to deal with two limitations of the SHR. First, reporting agencies occasionally fail to submit monthly SHR forms to the UCR office; this can occur for part of a year or an entire year. As a result, rates calculated from SHR data will be underestimated in nonreporting areas. The UCR office does provide adjusted counts of homicide victims in *Crime in the United States* (see any recent issue of the UCR for a description; e.g., 1980: 342–346). In our current study, a weighting procedure was devised for rate calculations that compensates for nonreporting in the SHR. Specifically, the data were weighted by the ratio of total homicides reported in the UCR for the time period in question (e.g., 1980–84) to the total number found in the SHR. (For a full discussion, see Williams and Flewelling, 1987.)

Second, among the homicide incidents that are reported, information on offender characteristics—and thus on the victim/offender relationship—is often missing, which can result in the underestimation of partner homicide rates and in biased estimates of statistical models. We address this problem by using an adjustment procedure that incorporates such missing data into the rate calculations.

The general strategy of this adjustment procedure is to extrapolate the characteristics (for example, relationship) of the known cases to those with missing information. The adjustments are determined and applied separately on the basis of the circumstances of the homicides. For example, felony incidents with missing victim/offender relationships are classified according to the distribution of felony incidents with known relationships. This strategy takes advantage of what is known about the circumstances of incidents with missing information on victim/offender relationship.[8] (See also Williams and Flewelling, 1987, for a complete discussion of the procedure.)

Using these weighting and adjustment procedures, rates of partner homicide are calculated as follows:

$$\text{Specific homicide rate} = [(I/P) \times 100{,}000]/5$$

where $I =$ the total number of weighted and adjusted incidents of one-on-one homicide of a specific type (for example, incidents involving women killing their partners),

and $P =$ the total male or female population of the state, depending upon whether the male- or female-perpetrated rate is being calculated.

The division by five indicates that the rates are calculated over the 1980–84 period and expressed on a per-year basis.

[8] The strategy assumes that the missing cases of different types of homicide are not systematically different from the known cases, an assumption we cannot test.

C. Measures of Legal and Extralegal Resources

Two indices, one legal and one extralegal, were created as measures of resources available to women at risk from male partners: the Domestic Violence Legislation Index (see Sugarman and Straus, 1988) and the Resources for Abused Women Index.

Components of the Domestic Violence Legislation Index are as follows:

1. statutes providing civil injunctive relief for victims of abuse;
2. statutes providing temporary injunctive relief during a divorce, separation, or custody proceeding;
3. statutes defining the physical abuse of a family or household member as a criminal offense;
4. statutes permitting warrantless arrest based on probable cause in domestic violence cases;
5. statutes requiring data collection and the reporting of family violence by agencies that serve these families; and
6. statutes providing funds for family violence shelters or establishing standards of shelter operation.

Each state received one point on the Domestic Violence Legislation Index for the presence of each statute as of 1980; the mean was 3.0 (standard deviation = 1.71). Thus, possible scores ranged from 0 (no domestic violence legislation)[9] to 6 (the presence of all the statutes in the index).[10]

The Resources for Abused Women Index is composed of two variables:

1. number of shelters for battered women per capita in a state; and
2. wife abuse programs other than shelters offering services for battered women per capita in a state.

These programs provided one or more of the following services: counseling, crisis aid, legal aid, support and educational services, referrals, housing, and victim advocacy.[11] These variables were created based on a count of the number of shelters and other programs offering wife abuse services in each state as of 1980 per 100,000 women. The two resources variables are highly correlated (r = .81); therefore, they were combined into a single index. This index then taps the availability of actual avenues of escape, protection, and aid as well as agency surveillance and the presence of more general social supports for women at risk from aggressive male partners.[12] All variables (that is, the partner homicide rates

[9] Alabama, Idaho, Mississippi, and South Dakota.

[10] Nebraska, New York, Oregon.

[11] For sources see Back *et al.* (1980); and Center for Women's Policy Studies (1980).

[12] The range was from .34 (Arkansas) to 9.53 (Alaska). The mean was 1.73 (standard deviation = 1.63).

and the two indices) were logarithmically transformed to adjust for skewness.

D. Units of Analysis and Control Variables

States are used as the units of analysis because one of the key variables of interest—domestic violence legislation—is a state-level characteristic. Specifically, because each state has the authority to formulate its own legal policy concerning the protection and rights of women, an analysis of the impact of this legislation should begin at the level at which it is created. Furthermore, we have not found detailed data on the availability of shelters and wife abuse services for a large sample of sociopolitical units other than states. Hence, we must confine this preliminary analysis to the state level.

We recognize, however, that state policies are implemented at local levels and that resources for women at risk tend to be concentrated in urban centers, where their impact is thus likely to operate. The data on domestic violence legislation and resources for abused women do not allow us to estimate directly the effects of these variables on rates of female-perpetrated partner homicide within urban areas. Yet we can approximate such an analysis by controlling for the percent of the state population living in urban areas.

Three additional demographic variables control for their possible influence on the estimated effects of domestic violence legislation and resources for abused women on rates of female-perpetrated partner homicide: (1) percent of population that is black; (2) geographic location; and (3) population mobility.

1. Percent of Black Population. Rates of partner homicide perpetrated by black women are, on the average, more than five times higher than those for white women (for black women, $\bar{X} = 4.34$; and for white women, $\bar{X} = .80$). Moreover, the availability of resources, especially shelters and services for women, is likely to be lower for states having large black populations. The correlation among states between this index and the percent of black population is substantial ($r = -.62$). As a result, omitting racial composition could produce a spurious negative association between resource availability and rates of partner homicide perpetrated by women. The percent of a state's population that is black is included to control for this possibility.

2. Geographic Location. Homicide rates are higher in the South than in other parts of the country. This is true of partner homicide as well. In fact, the correlation between location in the South and female-perpetrated partner homicide, using states as the unit of analysis, is quite high ($r = .75$). In turn, the availability of domestic violence legislation and resources for abused women is lower in the South than in other regions ($r = -.33$ and

$r = -.59$, respectively). While other factors, such as economic deprivation, associated with regional location and homicide could be producing such patterns,[13] Southern location appears to have an independent effect on homicide rates involving intimates (for a review see Williams and Flewelling, 1988). In any case, we use a South/non-South dummy variable to control for regional differences in homicide that could bias our results.

3. **Population Mobility.** The final control variable in the analysis is the amount of population mobility within states, or the percent of the population in 1979 who had lived in a different house but the same state in 1974. The justification for this variable was suggested by Williams and Flewelling (1988), who argue that the disrupted life circumstances associated with mobility weaken the social ties such as support networks that create and maintain access to effective social control. As a result, conflicts can escalate to lethal proportions in the absence of some third-party intervention. Community ties, including access to supportive or protective services offered by community agencies, may be severed or at least weakened. Thus, conflicts between mobile couples are more likely to be resolved through some "self-help" method, including the use of lethal violence by women in the face of male aggression. To control for these possibilities, population mobility is included in the analysis.

Data for these demographic variables, including percent urban, are available in the CHF state sample, although they were originally drawn from United States Census materials.

IV. RESULTS

Before exploring the relationship between resource availability and female-perpetrated partner homicide, we examine the nature of female involvement in homicide 1980–84. We then report patterns of association between the homicide rates and the two indices. Finally, we estimate the independent effects of these indices on rates of female-perpetrated partner homicide, controlling for the demographic variables and the rate of male aggression against their female partners, as indicated by the rate of male-perpetrated partner homicide.

[13] We explored the effects of a general measure of poverty used in previous comparative studies of homicide (for example, Williams and Flewelling, 1988). While this measure had a robust effect in those studies, it did not have a significant effect on the rate of female-perpetrated partner homicide. Perhaps a more refined measure (for example, women in poverty) would produce different results, but it may well be that economic deprivation has a greater influence on the production of lethal violence by men. Future research should examine this possibility.

Table 1. Incidents of Partner and Other Homicide by Sex of Perpetrator, Age 15 or Older, in the United States 1980–84*

Sex of Perpetrator	Type of Homicide		Totals
	Partner	Other	
Male			
N	10,521	65,527	76,048
Column %	62.1	91.5	85.9
Row %	13.8	86.2	100.0
Rate	2.5	15.6	18.1
Female			
N	6,408	6,095	12,503
Column %	37.9	8.5	14.1
Row %	51.3	48.7	100.0
Rate	1.4	1.3	2.7
Totals			
N	16,929	71,622	88,551
Column %	100.0	100.0	100.0
Row %	19.1	80.9	100.0
Rate	1.9	8.2	10.1

* Partner homicide includes incidents involving spouses, ex-spouses, common-law spouses, and girl- or boyfriends. Other includes all other types.

A. Women as Perpetrators of Homicide

As shown in Table 1, women in the United States are much less likely to commit homicide than are men. During the years 1980–84, women perpetrated only 14 percent of all homicides committed by individuals age fifteen or older, for a homicide rate of 2.7. Men committed 86 percent of all of these homicides, for a homicide rate of 18.1. The characteristics of the homicides committed by men and women also differ. While only 14 percent of the homicides committed by men involved victims who were partners, 51 percent of those committed by women were partner homicides.

To explain women's involvement in partner homicide, we examine the extent to which resource availability is associated with variation in homicide rates. Given the literature on self-defense homicides by women, we would expect the female-perpetrated homicide rate to be lower in those states in which a higher level of legislative and other resources are present.

B. Patterns of Association

Table 2 presents a correlation matrix of partner homicide by sex of the perpetrator, the Domestic Violence Legislation Index, and the Resources for Abused Women Index. As predicted, the

Table 2. Correlation Matrix of Partner Homicide by Sex of Perpetrator, Domestic Violence Legislation Index (DVLI), and Resources for Abused Women Index (RAWI) for the 50 States

Variable[a]	Sex of Perpetrator	DVLI	RAWI
Male-perpetrated partner homicide			
Female-perpetrated partner homicide	.84**		
Domestic violence legislation	−.23	−.36*	
Resources for abused women	−.39*	−.60**	.20

[a] All variables are logarithmically transformed (base 10).
* $p \leq .01$; one-tailed test of statistical significance
** $p \leq .001$; one-tailed test of statistical significance

rate of female-perpetrated homicide is highly associated with the male homicide rate ($r = .84$). Most importantly, the rate of female-perpetrated homicide is negatively correlated with both indices of resource availability, indicating that the rate of such homicide is lower in those states in which domestic violence legislation and other resources for abused women are available.

Resource availability also correlates negatively with the rate of male-perpetrated partner homicide, but the correlation is substantially lower than with rate of female-perpetrated partner homicide. The correlation with the Domestic Violence Legislation Index is not significant for partner homicides perpetrated by men. Similarly, the Resources for Abused Women Index, although negatively correlated with rates of both types of partner homicide, is more strongly correlated with female-perpetrated than with male-perpetrated homicide.

The two indices pertaining to legal and extralegal resources for women, although highly related conceptually, are not strongly correlated empirically. Thus, they appear to be tapping different dimensions of alternatives for women. Domestic violence legislation may be an expressive function of a heightened public consciousness about male violence against women, while shelters and other supportive services are more tangible resources for dealing with the problem. Additionally, such tangible resources may indicate a more active feminist support network that can help women at risk, thus reducing the likelihood of self-defensive homicide. The stronger correlation between the rate of female perpetrated partner homicide with the Resources for Abused Women Index than with the Domestic Violence Legislation Index is consistent with these speculations.

To further explore the effects of resource availability on female-perpetrated partner homicide, we conducted a multivariate analysis to control for other potential influences. This analysis is

crucial given the high correlation between male and female rates of partner homicide.

Table 3 presents the results obtained from estimating three equations, using ordinary least squares (OLS), in which the rate of female-perpetrated partner homicide is the dependent variable. Equation 1 includes the two indices and the rate of male-perpetrated partner homicide. Equation 2 includes these three variables in addition to the demographic controls, and Equation 3 incorporates all independent variables plus the lagged rate of female-perpetrated homicide (that is, for 1976–79).

The lagged rate is used for two reasons. First, it reduces the likelihood that omitted variables produce biased estimates. It is a proxy for determinants of female-perpetrated partner homicide that are omitted from Equation 3, assuming that the influence of causal factors is relatively stable across states and over time. That is, one must assume that such factors operate similarly within states in both 1976–79 and 1980–84.

Second, including the lagged rates of female-perpetrated partner homicide in Equation 3 represents a form of linear panel analysis, meaning that the other independent variables in this equation are accounting for change in the rate of such homicide between the two periods (see Kessler and Greenberg, 1981). This is important for testing our argument, since this is the period in which new domestic violence legislation proliferated and services for women victimized by aggression from their male partners became increasingly available. It is also the period in which a decline in partner homicide by women has been empirically documented (e.g., Browne and Flewelling, 1986; Browne and Williams, 1987). Hence, detecting negative effects of the Domestic Violence Legislation Index and Resources for Abused Women Index in Equation 3 would suggest that the declining involvement of women in partner homicide for some states is partially due to the provision of such resources.

As Equation 1 shows, all three variables have significant independent effects on the rate of partner homicide perpetrated by women. The male perpetration rate has by far the greatest effect, but in addition the two indices of resource availability have significant negative effects apart from the rate of partner homicide perpetrated by men.

When demographic variables are introduced as additional controls in Equation 2, the effect of the Resources for Abused Women Index remains significant. The effect of the Domestic Violence Legislation Index becomes insignificant. One possible explanation for this is that percent urban is significantly associated with both the Domestic Violence Legislation Index and the rate of partner homicide perpetrated by women. States with large urban populations also have more extensive legislation for women at risk (r = .36) and lower rates of female-perpetrated partner homicide. Per-

Table 3. OLS Estimates of the Effects of the Domestic Violence Legislation and Resources for Abused Women Indices, Male-Perpetrated Partner Homicide, and Demographic Control Variables on Female-Perpetrated Partner Homicide for the 50 States[a]

Independent Variable	Equation 1		Equation 2		Equation 3	
	β	*b*	β	*b*	β	*b*
Domestic Violence Legislation Index	−.14	−.09**	−.04	−.02	−.04	−.02
		(.04)		(.04)		(.03)
Resources for Abused Women Index	−.31	−.15**	−.23	−.11**	−.11	−.05*
		(.03)		(.03)		(.03)
Male-perpetrated homicide, 1980–84	.69	.77**	.68	.78**	.48	.54**
		(.08)		(.07)		(.10)
Percent urban			−.23	−.35**	−.13	−.19*
				(.10)		(.10)
Percent black			.16	.04**	.10	.02
				(.02)		(.02)
Population mobility			.14	.12**	.11	.10**
				(.04)		(.04)
Regional location (1=South, 0=Other)			.10	.04	.08	.03
				(.03)		(.02)
Female-perpetrated homicide, 1976–79					.34	.34**
						(.10)
Constant	.04		.37		.12	
Adjusted R^2	.81		.90		.92	

[a] All variables (except regional location) are logarithmically transformed (base 10). Standard errors are in parentheses.

* $p \leq .05$; one-tailed test of statistical significance

** $p \leq .025$; one-tailed test of statistical significance

haps such legislation is utilized or enforced more often within urban than rural settings. Assuming such action is effective in reducing self-defensive homicide by women, comparisons among states will show that the greater the concentration of population in urban areas, the lower the rate of female-perpetrated partner homicide. This argument must be tested empirically by including a measure of utilization or enforcement in Equation 2, with this measure having a negative estimated effect that holds apart from that for the percent urban. Unfortunately, we cannot conduct such a test with these data.

The estimated effect for the Resources for Abused Women Index remains statistically significant, and the beta (β) coefficients for Equation 2 suggest that it and percent urban are the second strongest determinants of the rate of female-perpetrated partner homicide. The percent black and population mobility both have the expected positive effects on this rate, while regional location in the South has no significant effect.

The most rigorous test of our hypothesis based on these data is shown in Equation 3. We added as a control a proxy variable (that is, the lagged rate of female-perpetrated partner homicide in 1976–79) for causal influences not incorporated into this analysis, and we tested for change in the rate of female-perpetrated homicide. The estimated effect of the Resources for Abused Women Index remains significant and negative, thus supporting the hypothesis that the availability of such resources for women at risk reduces the likelihood of partner homicide by offsetting the need for self-defensive violent action.

The positive effect of population mobility on female-perpetrated partner homicide remains significant in Equation 3. This finding suggests that the disruptions linked to higher rates of internal movement within states are associated with a greater involvement of women in female-perpetrated homicide. Such disruptions may increasingly isolate women from supportive social networks, including women's groups or other agencies, that can help those at risk and thus reduce the likelihood of violent responses to male aggression.

V. DISCUSSION AND CONCLUSION

Although women in the United States rarely kill, when they do kill a male partner is likely to be the victim. Earlier analyses by Browne and Flewelling (1986) and Browne and Williams (1987) documented a sharp decline in the number of homicides perpetrated by women against their male partners from 1976 through 1984. Although the proportion of female-perpetrated partner homicides committed in self-defense is unknown, we theorized, given the data on the link between male aggression and the perpe-

tration of homicides by women, that the availability of resources that allow threatened women to escape or be protected from a partner's violence might be associated with this decline. This seemed particularly likely since the years during which the decline began saw the inception of legal and extralegal resources specifically targeted for abused women.

By offering threatened women protection, escape, and aid, such resources can engender an awareness that there are alternatives to remaining at risk for further violent interactions. The redefinition of wife abuse as a serious and socially condemned behavior and the presence of an activist feminist network add further symbolic support to women at risk from their male partners. We predicted that these supports would act to offset at least some of the killings that occur in desperation and that if such an association existed, it should be reflected in a measurable reduction in the rates of female-perpetrated partner homicide where legal and extralegal resources were available.

The current study showed the predicted negative correlation between the presence of both domestic violence legislation and other resources for battered women and the rate of female-perpetrated partner homicide. As expected, this rate was highly associated with lethal male aggression. Yet the rate of female-perpetrated partner homicide was significantly lower in states with higher scores on both the Domestic Violence Legislation Index and the Resources for Abused Women Index, even when the rate of male-perpetrated partner homicide was controlled.

While the estimated negative effect of the Domestic Violence Legislation Index became statistically insignificant when demographic variables were controlled, the effect for the Resources for Abused Women Index remained significant. Moreover, such resources were associated with a *decline* in the rate of female-perpetrated partner homicide in 1980–84 compared to 1976–79.

While the findings are consistent with the arguments developed in this paper and should serve as an incentive for further research, several caveats should be mentioned. With these data, we cannot trace a direct path between the nonperpetration of a homicide and the presence of a nonviolent alternative. *Availability* of the alternative is of course a necessary condition, and, as noted, the *presence* of resources can have both tangible and symbolic importance. However, given availability, other conditions must be fulfilled for a particular resource to have a direct inhibitory effect:

1. *awareness*—the individuals for whom the resource is intended must know of its availability;
2. *accessibility*—the resource must be practically accessible to the population for whom it is intended;
3. *mobilization*—the individuals must actually utilize the resource;

4. *responsiveness*—the resource must be responsive to those who attempt to utilize it; and
5. *effectiveness*—the response must be effective in meeting the needs of those who utilize it.

In the current study, we do not have information about how aware physically abused women or their partners are of domestic violence legislation or services in their area; about the way in which legislative directives are actually implemented or other resources for battered women are utilized; about the responsiveness of the criminal justice system and support services to those women who attempt to use them; or about the role of legislative policies and other resources in mitigating the problem of domestic violence. We also lack direct data on the proportion of female-perpetrated partner homicides that resulted from male threats or violence or both. Future investigations should be designed to estimate the effect of the above dimensions of legal and extralegal resources on this more refined measure of female-perpetrated homicide.

In addition, future research should determine whether other sources of female perpetration of homicide influence the relationships found here. Are these effects unique to partner killings by women, or do they hold for other types of female perpetrated homicide as well? Do the effects of resource variables differ by race (for example, black versus white partner homicide)? Others have noted that resources for women at risk are often unavailable (or not accessible, not utilized, unresponsive, and the like) to minority women (e.g., Schechter, 1982).

Research along these lines will help to determine whether rates of violent crime are responsive to legal intervention. The results presented here, however, at least offer the prospect that women's violence against male partners is responsive to interventions that make available alternative nonviolent responses to male aggression.

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