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Vicarious Violence: Spatial Effects on Southern Lynchings, 1890–1919¹

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This article considers what effect lynchings in one location had on lynchings elsewhere. The “contagion” model predicts that lynchings in one area *increased* the probability of lynchings in nearby areas, while the “deterrence” model expects the probability of lynchings in a given locale to *decline* when lynchings occurred elsewhere. County-level data for 10 southern states yield strong evidence of a negative spatial effect for three time periods (1895–99, 1905–9, and 1915–19) consistent with the deterrence model. Two interpretations for this spatial effect are: (1) whites were satisfied that local blacks were sufficiently threatened by nearby lynchings; (2) blacks altered their behavior to minimize conflict with local whites.

Terrorism is often a strategy for breaching the established social order, for creating disruption and disorganization with the aim of dismantling the prevailing system of social relations. Yet, terrorism need not be exclusively the instrument of insurgency. Indeed, reactionary terrorism can be, and has been, used to maintain and to fortify the status quo, and, in many instances, it has been a tool of the state. Reactionary terrorism is not limited to explicit state actions, however. The lynching of African-Americans in the South during the peak of antiblack violence between 1890 and the end of the First World War was a variety of reactionary terrorism that was tolerated by the state and is the focus of this article.

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Whereas many types of terrorism can be conducted by solitary individuals, lynching is a form of violent collective behavior that often invokes images of uncontrolled crowds—of the irrational mob. Gustav Lebon, Robert E. Park, and Herbert G. Blumer constructed theories of crowd behavior based, in part, on the notion that contagious emotion sweeps through a crowd, intensifying its behavior.² While there may be contagious reaction *within* a crowd, it is also possible for some forms of collective behavior to be spatially contagious, diffusing into nearby areas. The metaphors of epidemic and contagion have been applied to urban riots (Spilerman 1970),³ aircraft hijackings (Holden 1987*a*, 1987*b*), insurrections (Doreian and Humon 1976), and coups d'état (Pitcher, Hamblin, and Miller 1978). In this article, we extend this literature by asking whether, as some historians have suggested, lynchings were spatially contagious. Was the probability of mob violence in one region increased by similar outbreaks in other areas? Or, alternatively, did lynchings occurring elsewhere reduce the likelihood of subsequent lynchings?

LYNCHING IN THE SOUTH

The history of race relations in the American South during the late 19th and early 20th centuries is a violent one. In addition to frequent beatings, whippings, and verbal assaults, southern blacks faced the very real possibility of death at the hands of white lynch mobs. It has been estimated that, between 1890 and 1919, 1,748 black men, women, and children were lynched by whites—roughly one every six days (Tolnay and Beck 1995). Many contemporaries, including the southern press, viewed lynching as an extreme, but necessary, form of popular justice that guaranteed the swift and severe punishment of black criminals. Public participation was required, so it was claimed, because the southern criminal justice system was too slow, inefficient, and lenient. Recent scholarship, however, has cast serious doubt on the popular justice explanation for interracial lynchings and provided strong evidence that racial violence was one mechanism used by the white population to perpetuate its social, economic, and political domination of southern society (e.g., Ayers 1984; Beck and Tolnay 1990; Brundage 1993; Corzine, Corzine, and Creech 1988; Shapiro 1988; Tolnay and Beck 1992, 1995). Lynching, we argue, was a form of state-tolerated terrorism aimed at the black community—

² For a penetrating critique of the LeBon-Park-Blumer hypothesis, see McPhail (1991, pp. 15–20).

³ See Olzak, Shanahan, and McEneaney (1993) for a review and expansion of the literature on race rioting in the United States.

it was the instrumental use of violence to preserve white hegemony and maintain the caste boundary.⁴

To be truly effective, acts of terrorism and the threat of victimization for the targeted group must be widely known in the population. There is little doubt that southern whites and blacks, alike, were very aware of lynchings. As historian Edward Ayers (1992, p. 158) noted, "For generations, young black men learned early in their lives that they could at any time be grabbed by a white mob—whether for murder, looking at a white woman the wrong way, or merely being 'smart'—dragged into the woods or a public street to be tortured, burned, mutilated. It was a poisoned atmosphere, one that permeated life far beyond those counties where a lynching had actually taken place, one that pervaded all the dealings each race had with the other." The southern press seemed to revel in reporting the gruesome news of lynchings, including detailed descriptions of the insults and injuries inflicted on mob victims and of the victim's alleged crimes (Ginzburg 1988). Travelers also helped to assure that the news of lynchings was spread by word of mouth. It is probably little exaggeration to say that no southern white was unaware of the activities of lynch mobs and that no southern black failed to appreciate that he or she, too, could be a victim of the mob.

The terroristic function of lynching, coupled with relatively efficient vectors of communication regarding lynchings that had occurred, raises the interesting possibility that events across regions of the South were not independent of one another. In this article, we use county-level data for three periods during the peak of the "lynching era" (1895–99, 1905–9, and 1915–19) to determine the form and to assess the magnitude of the spatial dependence of lynchings. That is, our investigation is designed to answer the following questions: Was the number of lynching incidents in one county influenced by the frequency of lynchings in other counties, especially those nearby? And, if so, how? Two very different interpretations of spatial dependence are considered: a "contagion model," in which lynchings in one locale *increased* the frequency of lynchings in other areas, and a "deterrence model," which predicts that such lynchings *decreased* the likelihood of lynchings in other areas.

⁴ We use the term "terrorism" in a more general meaning than that used by Brundage (1993) to create his typology of lynchings. We consider virtually all lynchings to have had a terroristic function because, regardless of the precipitating incident, they created an atmosphere of fear within the black community. That lynchings were tolerated by the state and sometimes even sanctioned is suggested by the extremely low probability of arrest, prosecution, and conviction of mob members—despite the fact that they were often well known to authorities. See also Gibbs's (1989) effort to define "terrorism" and his suggestions for the development of a theory of terrorism.

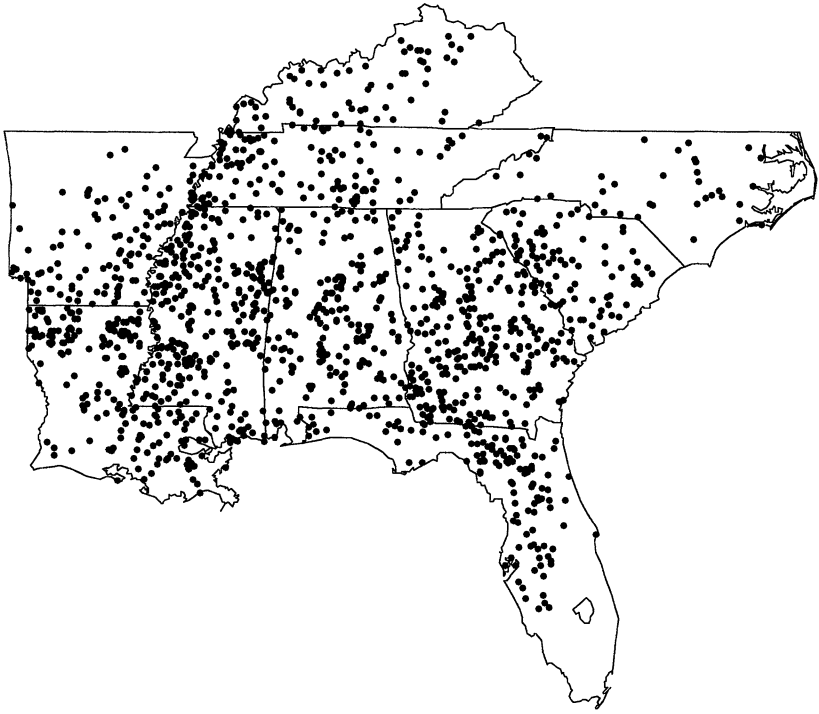


FIG. 1.—Geography of lynchings of blacks by white mobs, 1890–1919

THE SPATIAL DISTRIBUTION OF LYNCHINGS

It is well known that most black lynchings occurred in the South. Despite their widespread dispersion throughout the South, figure 1 suggests that lynchings were not distributed randomly across areas.⁵ Lynchings were relatively sparse in states that were closer to the North, such as North Carolina, Kentucky, and Tennessee. In contrast, they were more common in the historic “Black Belt,” which ran southwesterly from South Carolina through Georgia, Alabama, Mississippi, and Louisiana. This, of course, was the area that was dominated by a slave economy before the Civil War and by plantation cotton production afterward (Mandle 1978). Northern central Florida was another area of intensive mob activity during this period.

⁵ This is a point also made by Brundage (1993) in his description of the “geography of lynching” in Georgia and Virginia.

Indeed, recent evidence from cross-sectional (often county-level) investigations suggests that lynchings were more likely to occur in areas that had larger black populations (absolutely and proportionately), that were more dependent on cotton, and in which whites felt threatened economically by their black neighbors (e.g., Brundage 1993; Corzine, Creech, and Corzine 1983; Reed 1972; Tolnay and Beck 1995). In short, these conditions were more likely to create a social atmosphere conducive to racial tension and violence. If lynchings were entirely randomly distributed throughout the South, then we should not expect to find the intensity of lynching to be associated with variation in these structural conditions across local areas.⁶ In addition, given the tendency for neighboring areas to share generally similar socioeconomic characteristics, we would also expect to find a geographic "clustering" of lynchings. Perhaps this accounts for the more frequent occurrence of lynchings in such areas as the Mississippi Delta and the Black Belt of Georgia.

On the other hand, perhaps a diffusion process was operating to create the nonrandom distribution of racial violence. Lynchings may have spread like a contagious disease, with white mobs in one locale infecting their counterparts in other, nearby, areas. Ayers (1984, p. 243) assumes such a process when he writes, "Thanks to the speed and thoroughness with which news of lynchings were spread by the press of the late nineteenth-century South, the crisis of one isolated county could soon fuel the fears and anger smoldering in a county hundreds of miles away." If this type of diffusion was operating, then we would expect pockets of more frequent lynching. Despite Ayers's description, however, the risk of contagion would probably decay quite rapidly with increasing distance, given the more efficient transmission of information about lynchings to nearby areas. Such a diffusion process could have existed whether or not neighboring areas shared the same structural and cultural characteristics. Net of other factors that may have influenced the frequency of lynching, a contagion diffusion effect would have produced a *positive* association among the number of lynchings across proximate counties.

The spread of ideas, information, or behaviors through diffusion is considered an important force for many types of social innovations or change (e.g., Rogers 1983). It has been especially common to use a diffusionist perspective to explain the spread of technological innovations. For instance, Brown, Malecki, and Spector (1976) documented the diffusion of bovine artificial insemination in Sweden from the late 1940s through the early 1960s. Strang and Tuma (1993) discuss contagion and the diffusion

⁶ In addition, lynchings were not distributed randomly over time. Beck and Tolnay (1990), e.g., have shown that lynchings occurred more frequently in years when the "real" price of cotton was low and inflation was high.

of medical innovation. Nonmaterial innovations can also diffuse within, and across, populations as well. Dann (1976) describes the diffusion of a religious movement, the Holiness Church, throughout the United States between 1860 and 1920. In analyses confined to a "spatial" rather than "temporal" diffusion process, Tolnay (1995) inferred a significant diffusion of fertility levels across southern counties in 1940, while Land, Deane, and Blau (1991) found evidence of a positive spatial effect for counties' rates of "church adherence" in the early 20th century. Others have concluded that diffusion has played an important role in social movements such as the "sit-in" protests of the 1960s (Oberschall 1989).

Virtually all of the evidence for diffusion processes in social change, social innovation, or social "imitation" has demonstrated that a characteristic or event in one location (or time period) is made *more likely* by the same characteristic or event in another location (or time period). Certainly, it is this same type of diffusion process (a positive spatial effect) that must be hypothesized in order to explain the geographic clustering of southern lynchings. However, it is not the only type of diffusion process that could have been operating.

Although some degree of geographic concentration is discernible in figure 1, it is also true that lynchings occurred in virtually all sections of the southeast. If a strong contagion effect was operating to determine the geographic distribution of lynching, in conjunction with structural influences, then should we not expect an even more severe clustering than is apparent in figure 1? It is possible that the spatial concentration of lynchings that is present in figure 1 was due *entirely* to the shared structural and cultural characteristics of proximate counties and that the residents of one county *did not* imitate their neighbors when they lynched blacks. Indeed, perhaps a lynching incident in one county actually *decreased* the likelihood of an incident in nearby counties—net of other factors related to the frequency of lynching. There are two primary processes through which a "negative spatial effect" may have operated—both assume the use of lynching as a form of terroristic social control over southern blacks. The first emphasizes the reactions of whites; the second focuses on the responses of the African-American community.

It is clear from the way that lynchings were conducted that one of their important terroristic functions was to send a message to the black community. That message was to warn blacks not to expect more from southern society than whites were willing to give. And, whites were not willing to grant political, social, or economic equality to blacks, nor were they willing to tolerate interracial sexual "amalgamation." To make the terroristic message more explicit, some mobs pinned notes on the bodies of their victims warning of the similar fate that awaited any other blacks who offended whites (Tolnay and Beck 1995, p. 64). Other mobs took pains

either to carry out their lynchings within the black community or to relocate the corpse afterward so that it could be displayed where blacks were certain to see it. Newspapers seemed anxious to use their stories about recent lynchings as an opportunity to remind blacks of the consequences of unacceptable behavior. A typical example is the story run by the *Memphis Commercial Appeal* following the lynching of a black man, John Jones, who had been accused of "outraging" an infant girl. The paper noted, "It will be known in the course of time that all such crimes as these always meet justice at once, by hanging to the first limb available. Monroe County [Mississippi] is ashamed to realize that such a demon had an existence within her borders" (*Memphis Commercial Appeal*, April 15, 1896, p. 2). Many other newspaper stories of lynchings included similar expressions of the need to remind the black community that certain behaviors would not be tolerated. Based on these efforts to publicize lynchings, one must conclude that southern whites believed strongly in the general deterrent effect of lynchings. That is, by punishing a single offender, they believed that they could discourage similar offenses by others. Some whites even seemed to believe in a "prophylactic" effect of lynchings in the absence of an offense, as illustrated by the following reminder by Georgia Populist and politician, Tom Watson (quoted in Woodward 1963, p. 432), "In the South we have to lynch him [a black man] occasionally, and flog him, now and then, to keep him from blaspheming the Almighty, by his conduct, on account of his smell and his color. . . . Lynch law is a good sign: it shows that a sense of justice yet lives among the people."

Why should southern whites desire to intimidate local blacks with the threat of violence? Recent studies of lynchings during the late 19th- and early 20th-centuries have concluded that violence (and the threat of violence) was part of the arsenal used by whites in some areas to perpetuate white supremacy, especially the *economic* dominance of whites. For example, Brundage (1993) claims that violence was more likely in areas where there was a sharp racial line dividing landowners and tenants in a plantation economy. Periodic lynchings reminded blacks of their subordinate status and discouraged their efforts to transcend that status. Tolnay and Beck (1995) argue more broadly that racial violence (including lynching) served the interests of *both* major classes of whites. Owners and planters benefited because racial discord and violence discouraged a coalition of poor whites and blacks. For landless whites, lynching reinforced the southern caste line, which, in many cases, was all that preserved their superiority over blacks, many of whom shared their economic misfortune. Thus, when southern whites got out their ropes and torches, there was often more at stake than the straightforward punishment of an individual, alleged miscreant.

While many southern whites agreed that lynching could be useful for

keeping local blacks in their place, perhaps the same effect was accomplished when lynchings occurred elsewhere, especially in neighboring areas. Even if nearby lynchings had little impact on the behavior of local blacks, the motivation for mob action may have been reduced *if whites were convinced of the deterrent effect of lynching*. An even more sinister, and less utilitarian, possibility is that lynchings in other areas satisfied a certain bloodlust among local whites, thereby reducing their urge to lynch.

Reactions by blacks might also have contributed to a negative spatial effect of lynchings. Once word spread of a lynching in a nearby county, local blacks may have been reminded of their extreme vulnerability. Although it was difficult for blacks to eliminate completely the possibility of being lynched (given the great variety of reasons for mob violence), increased circumspection and deference toward whites might have lowered their risk to some degree. Other things being equal, if local blacks made a special effort to avoid antagonizing the white community in response to a nearby lynching, then the likelihood of a lynching in their own community may have been attenuated. This explanation for a negative spatial effect is similar in nature to the "routine activities" theory of deviant behavior (see Cohen and Felson 1979). Only, in this case, blacks would have reduced their exposure to mob victimization by altering their behavior and demeanor.⁷

Unlike the more common "positive spatial effect" typically described by contagion-diffusion models of social change, a negative spatial effect for lynching describes a process whereby an incident in one location is made *less likely* by an incident occurring in another location. The result of such a process would be a *negative* association in the frequency of lynchings across nearby counties. And, the mechanism for this process could be a "satisfied" white population, an intimidated black population, or both.⁸ In either case, however, a negative spatial effect could partially account for the absence of an even *stronger* geographic clustering of lynchings in figure 1.

⁷ We do not wish to imply that all southern blacks cowered in response to violent threats from the white community. There were many instances in which blacks offered strong resistance to lynch mobs (see, e.g., Brundage 1990; Shapiro 1988), though the result of such resistance was often intensified bloodshed.

⁸ The negative spatial effect that we refer to as a "deterrent effect" shares some similarities with social processes identified by others. Spilerman (1975, pp. 396–97), gives examples where the suppression of crime in one area causes it to migrate to an adjacent area. He refers to this as a "substitution" effect, but it obviously implies a negative spatial correlation. Also, Coleman (1964, p. 299) refers to negative contagion as "aversion," as in behavioral learning theory. We prefer the label "deterrent effect" in this situation because responses to nearby lynchings by both the black and white populations were possible.

A third possibility, of course, is that a lynching occurring in one locale had no impact, positive or negative, on events in other areas. In other words, once we take into account area similarities in the social and economic conditions that create an atmosphere favorable for lynching, there is no association between the frequency of incidents across counties.

To summarize, there are three distinct possibilities for the spatial effect of lynchings in one area on the frequency of lynchings in other areas. When we simplify the discussion to consider only two counties, county A and county B, the contagion model predicts that if county A has a higher than average frequency of lynchings, then so will county B. The deterrence model predicts that county B will have a lower than average frequency of lynchings when county A has a higher than average number of lynchings. The random distribution model expects the frequency of lynching in county A and county B to be unrelated. The hypothesized effects for all three models assume that other influences on racial violence are controlled (Doreian 1981).

MODELING THE SPATIAL EFFECTS OF LYNCHING

Estimation of a spatial effects model of lynching is made more difficult than the simplistic example just given for four important reasons. First, it is necessary to consider the potential impact of incidents in *all* counties on the frequency of incidents in *every other* county. To illustrate, if we let L_i be the number of lynching incidents in county i , and we have 800 southern counties, then we are confronted with the following situation:

$$\begin{array}{ccccccc} L_1 & \leftarrow & L_2, & L_3, & L_4 & \cdots & L_{800} \\ L_2 & \leftarrow & L_1, & L_3, & L_4 & \cdots & L_{800} \\ \vdots & \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ L_{800} & \leftarrow & L_1, & L_2, & L_3 & \cdots & L_{799} \end{array}$$

And, the central question is what directional sign (positive or negative), and magnitude (zero or nonzero), the arrow takes.

Complicating the task further is the very real likelihood that the potential impact of lynchings in one county on events in another county (say L_j on L_i), weakens as the distance between counties is greater. The “decaying” influence of events in more remote counties can be taken into consideration relatively easily by introducing the distance between counties into the model. For example, when considering the impact of L_j on L_i we can divide the number of lynching incidents in county j by some quantity based on the distance between counties i and j : L_j/D_{ij} . And, this

type of adjustment can be made for every other county and its distance from county i .

A third complexity concerns a problem that has been noted repeatedly in the literature—that it is not possible to differentiate between contagion effects and effects due to heterogeneity (e.g., Coleman 1964, p. 301; Eaton and Fortin 1978; Spilerman 1970; Taibleson 1974). Clearly, there is a tendency for nearby, especially contiguous, counties to share many of the same social, economic, and cultural characteristics. If those characteristics tend to encourage lynching in both counties and they are not taken into account when estimating the impact of L_j on L_i , then it is quite likely that we would infer a *significant positive* spatial effect of lynchings that is really spurious in nature. To avoid such an erroneous conclusion, it is necessary, when estimating spatial effects, simultaneously to consider other characteristics shared by counties that also influence the frequency of lynching incidents (Doreian 1980).

A fourth complexity is related to the third. Because the frequency of lynchings in nearby counties is influenced by similar lynching-inducing forces, it is not appropriate simply to introduce a measure constructed from the number of lynchings in all other counties (a “lynching exposure” measure) as a predictor of the frequency of lynchings in the target county. Ord (1975) has shown that this approach may easily result in a violation of the ordinary least squares assumption that the regression disturbance, u , and the explanatory variables, X , are uncorrelated. Land et al. (1991, p. 240) note that under this approach, inference is conditioned by the assumption that spatial effects are determined prior to the dependent variable. The point of many spatial effects models is that the spatial process is determined simultaneously with the dependent variable. Otherwise, the joint dependence of the spatial term and the observed number of lynchings on the same explanatory variables will make estimates of the spatial effect inconsistent and difficult to interpret.

In the analyses to follow we adopt a technique developed by geographer Luc Anselin (1988) that deals with each of these four complexities. Anselin’s method requires that we solve two equations. The first equation is used to derive an estimate of the potential impact of lynchings in all counties on every other county (lynching exposure). It takes the following form:

$$L_i = \beta_0 + \sum \beta_k X_{ki} + \epsilon_i, \quad (1)$$

where

- L_i = the number of lynching incidents in county i ,
- β_0 = the regression constant,
- X_{ki} = a set of k variables that describe the social and economic characteristics of county i ,

β_k = the effect parameters that describe the effect of social and economic variables on lynchings,
 ε_i = the disturbance term for (1).

Using equation (1), we obtain a set of predicted values (L_i^*) for each county that describe the expected number of lynchings, given the county's social and economic characteristics. For each pair of counties, the predicted value is then divided by the distance between the two counties. For example, when considering the potential (spatial) effect of lynchings in county j on incidents in county i , we have: $LE_i = L_j^*/D_{ij}$. And, the potential exposure for each county i to events in *all other counties* is

$$LE_i = \sum(L_j^*/D_{ij}), \quad (2)$$

where

LE_i = the lynching exposure for county i ,
 L_j^* = the predicted number of lynchings for county j (based on the parameter estimates for eq. [1]),
 D_{ij} = the distance between counties i and j .⁹

Finally, LE_i (the lynching exposure for county i) is used as a predictor of the actual number of lynchings in county i . In addition, the original set of social and economic characteristics used in equation (1) is retained in the new equation. Thus,

$$L_i = \beta_0 + \beta_n LE_i + \sum \beta_k X_{ki} + v_i, \quad (3)$$

where L_i , LE_i , β_0 , X_{ki} , and β_k are as described above, β_n is the effect coefficient for the lynching exposure variable, and v_i is the disturbance term for equation (3). The form and magnitude of the spatial effect for lynching is indicated by the coefficient, β_n . If β_n is statistically significant, then we can conclude that the frequency of lynching in a given county *was* affected by incidents in other counties. A *positive* sign for the coefficient will be supportive of the contagion model. A *negative* sign suggests that a deterrence effect was operating.¹⁰

Anselin's technique for estimating spatial effects in cross-sectional data is generally similar to the two-stage least squares method described by

⁹ In our calculation of lynching exposure, we have used the cube of distance to model a more rapid decay of influence with increasing distance. This is discussed more fully below.

¹⁰ Although eqq. (1)–(3) are defined in terms of a contemporaneous spatial effect, a "lagged" spatial effects term is used in our empirical models, as described in more detail in the following section.

Land and Deane (1992). And, the two techniques yield very similar findings. The primary advantage of Anselin's method is that it does not require the identification, and use, of instrumental variables—an always challenging undertaking when estimating systems of simultaneous equations.

DATA, VARIABLES, AND METHOD

We use county-level data for 10 southern states to assess the presence, and form, of spatial effects in lynching.¹¹ Separate spatial effects models are estimated for three time periods during the lynching era: 1895–99, 1905–9, and 1915–19. When a county's boundaries changed during a decade, we created a new geographic unit, called a "county cluster" that included all counties involved in the boundary change for that decade. For example, if county C was created from parts of counties A and B in 1907, then we would use a county cluster for analyses for 1905–9, consisting of all three counties. The center of the new county cluster is then used for measuring distances between counties, and all variables in the analysis (e.g., the number of lynching incidents) are aggregated over the three constituent counties: A, B, and C. It is necessary to construct county clusters by decades, rather than for specific five-year periods (e.g., 1905–9) because the structural control variables are decade specific.¹² Because of such realignments the number of county units included in the analyses varies slightly across decades.

The second half of each of the three decades is analyzed in order to allow for the inclusion of *lagged* effects in the models. As described below, the spatial effects term will refer to lynching incidents that occurred during the previous five-year period—for example, incidents in 1890–94 are used to construct the spatial effects term for lynchings in 1895–99. It is desirable to restrict the measurement of the lagged spatial effects term to the same decade for which the dependent variable is measured in order to avoid unnecessary clustering of counties. If data from two different decades were included in the same model, then it would be necessary to

¹¹ The 10 states are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee.

¹² This decade-by-decade clustering of county groups is preferable to using the Horan-Hargis county template (Horan and Hargis 1989), which clusters "backward" from 1980, thereby creating larger clusters of county groups than is necessary when only a few decades are considered. For states that experienced extensive county realignments during the early 20th century (e.g., Florida and Georgia) use of the Horan-Hargis template produces a relatively small number of county groups for each state. Of course, for analyses of very long term trends (e.g., across several decades) in county-level characteristics, the Horan-Hargis template is appropriate and useful.

group counties that were involved in boundary changes occurring over a 20-year period (e.g., 1880–99). In some regions, especially Florida and southeast Georgia, that would result in huge county groups and a diminution in the number of cases.

Below we briefly describe the variables that are used in the models for all three decades, focusing on those variables included in the equation that includes the spatial effects term, as described in equation (3).

Dependent Variable

We use the number of lynching *incidents* within counties to measure the intensity of violence during each period. Incidents are further restricted to those that were conducted by a white mob and claimed at least one black victim. This restriction is imposed to reduce the potentially confounding influence of the less common intraracial lynchings or incidents in which the mob was racially mixed.¹³ The number of incidents, rather than the number of victims, is used because the type of “diffusion” processes described above were more likely to be triggered by the mere occurrence of lynching events, rather than the number of victims claimed in each event.¹⁴ Information for lynching incidents is drawn from a new inventory of southern lynchings in which each event was verified through stories carried in contemporary southern newspapers.¹⁵

Lynching Exposure

We refer to the spatial effects term described by Anselin as the “lynching exposure” for each county because it summarizes the intensity of lynching in other (especially neighboring) counties.¹⁶ It is exposure to such external

¹³ See Beck and Tolnay (1996) for a discussion of intraracial lynchings and their unique characteristics.

¹⁴ Some investigators have used a lynching “rate” rather than the number of lynchings as the dependent variable in their analyses. While this may be appropriate in some cases, we believe it was far more likely that any spatial effect for lynchings depended on the *number* of incidents rather than their *rate*. Neither blacks nor whites were likely to have “adjusted” the number of incidents in nearby counties (or their own) to “probabilities” based on size of the population at risk. Brundage (1993, p. 104) makes a similar point.

¹⁵ For additional information about this lynching inventory and how it was constructed, see Tolnay and Beck (1995).

¹⁶ It has been common for previous investigators to refer to the spatial effects term as the “potential” for a given characteristic to diffuse across geographic boundaries. Land and Deane (1992), e.g., refer to a “church adherence potential,” and Tolnay (1995) refers to “fertility potential.” The hypothesized processes for a spatial effect on lynching are based explicitly on an assumption of “exposure” to external lynching incidents.

events that may have affected the frequency of lynchings within individual counties. The derivation of the measure of lynching exposure and its use in the statistical analysis were described in detail in the previous section (see eqq. [2] and [3]).

As mentioned above, the spatial effects term is constructed using the number of lynchings in all other southern counties during the previous five years. Thus, we assume that incidents that occurred in other counties in years t to $t + 4$ can affect the number of lynchings in the target county during years $t + 5$ to $t + 9$. This specification avoids the potential problem of inferring spatial effects on lynchings that actually occurred *before* the events in the target county. Despite the lagged nature of the spatial effects term, we still apply the Anselin technique (eqq. [1] and [2]) to construct the measure of lynching exposure, rather than simply including the lagged number of lynchings in other counties as a predictor in equation (3). This is advisable, given the likely joint dependence of lynchings during both five-year periods on the structural control variables—which are measured as of the beginning of the decade.

Lagging the measure of lynching exposure by five years allows for the possible spatial effect of lynchings that occurred as much as 10 years in the past. For example, a lynching in year t might affect (positively or negatively) the likelihood of lynchings in year $t + 9$, though that would be a relatively uncommon situation. Although more recent lynchings probably had a greater impact on subsequent events, southern communities had relatively long memories of previous lynchings. To the extent that prior lynchings lost their ability to influence behavior with the passage of time, then this specification predisposes our analysis *against* inferences of spatial effects. Consequently, any evidence of spatial effects yielded by the analysis is probably a conservative estimate.

We have used distance *cubed* between counties when computing the lynching exposure variable, which emphasizes the spatial effect of the relatively immediate area. The use of distance cubed is preferable to an adjacency criterion or an arbitrary distance criterion between counties because it allows for smoother decay of effect, albeit a rapidly declining (with distance) effect. However, by using the cube of distance, we are assuming a greater importance of lynchings in proximate, likely adjacent, counties. This implies that word of mouth and stories in local papers were more efficient vectors of communication than stories carried in larger regional newspapers, such as the *Atlanta Constitution* or the *Memphis Commercial Appeal*. We believe that these are reasonable assumptions since it is likely that residents of, say, Clarke County, Georgia, were more emotionally engaged by events in neighboring Oconee County than they were by lynchings in Sunflower County, Mississippi—several hundred miles away. Since any specification for the distance measure is necessarily arbi-

trary, it is important that the specification agrees with the potential diffusion process that is assumed to be operating. That is the criterion we have followed in selecting distance cubed.¹⁷

Control Variables

It is important, when estimating spatial effects models, to control for other area characteristics that may have determined the intensity of the phenomenon of interest. Unless the model is correctly specified to include the important structural determinants of the phenomenon in question, it is very difficult to distinguish spatial effects from shared structural characteristics. Such a distinction is critical if spatial effects are to be interpreted as a diffusion process. In this case, we have included a number of control variables—many of which have been shown to have influenced the level of lynching in southern counties. Since these variables are of secondary importance to the estimation of possible spatial effects in our analysis, we offer only a relatively brief description of them, and their purpose in the model. The control variables can be grouped into four different categories.

Demographic.—A control is included for the relative size of the black population within each county. The percentage of blacks in the population (%black; both linear and squared terms) is controlled, in light of previous research that has inferred a strong positive, often nonlinear, effect of the relative size of the black population on lynching (see, e.g., Corzine et al. 1983; Reed 1982; Tolnay and Beck 1995). It is also useful to allow for a nonlinear relationship between %black and lynchings, given Blalock's (1967) differentiation between "political" and "economic" threats and discrimination against minority groups. Previous work has found greater support for Blalock's "economic threat model," which produces a positive effect of black concentration on lynchings that grows weaker when %black increases (Tolnay and Beck 1995). In contrast, Blalock's "political threat model" predicts a positive relationship that grows stronger as %black increases.

Socioeconomic and cultural.—Two, more direct, measures of the socioeconomic and cultural characteristics of counties are also controlled. The percentage of white farmers who were tenants (both linear and squared terms) is included to account for the economic status of whites. Many have

¹⁷ In supplementary analyses, we replaced distance between county centroids with an adjacency-type distance criterion. By experimenting with various "threshold" distances—assigning L_j/D_{ij} a value of "0" if the two counties (i and j) were farther apart than the threshold, and a value of L_j if they were closer together—we found that a threshold of 30 miles produced results almost identical to those obtained when distance cubed is used.

speculated, and there is some empirical evidence to suggest, that lynchings were more common in areas where whites were economically disadvantaged (Brundage 1993; Raper 1933; Tolnay and Beck 1995). Throughout the decades considered here, landlessness among white farmers became more common, and the growth of farm tenancy represented a significant deterioration in the economic status of rural whites. However, the association between “%white tenants” and lynchings does not appear to be a simple one. Previous work has found evidence of a nonlinear relationship, with sharper increases in lynching at higher levels of tenancy (Tolnay and Beck 1995).

We mentioned above, while discussing figure 1, that many lynchings occurred in the South’s Black Belt, a region dominated by plantation agriculture and dependence on cotton cultivation. Tolnay and Beck (1995, pp. 157–60) have argued that the South’s “cotton culture,” so prevalent in the Black Belt, created a social and economic environment conducive to lynching. This was due to many social forces, including a racist ideology inherited from slavery, demand for labor control over the heavily black labor force, and economic competition between blacks and poor whites. To allow for the possible influence of the many social, economic, and cultural aspects of the cotton culture on lynchings, we include a measure of “cotton dominance” in our analysis. Cotton dominance is measured as the percentage of “improved acres” in the county that was planted in cotton.

Lynching history.—Two control variables are included in our equations to account for cross-county variation in the general reliance on lethal punishment, as well as recent lynchings of blacks within the county itself. First, “prior white lynchings,” the number of lynching incidents with *white* victims during the previous five years, is included to control for a county’s predisposition toward lynching—irrespective of race. Second, proneness to black lynchings is represented by “prior black lynchings,” the number of lynching incidents with *black* victims during the previous five years. Conflicting hypotheses might be offered regarding the effect of this variable. On the one hand, a positive effect might be predicted, since “lynch prone” counties should have higher numbers of lynchings during the first *and* second halves of the decade. In contrast, “lynch averse” counties should have fewer lynchings during both time periods. On the other hand, the same logic that forms the basis of the potential *negative* spatial effect (the deterrence model) might also predict a negative effect of prior black lynchings that were internal to the county. That is, whites may have been satisfied that a message had been sent to the black community, and/or blacks may have modified their routine behavior in response to an earlier lynching.

The measure of prior black lynchings is restricted to the previous five-year period in order to capture the recent history of racial violence within

the county. However, the lagged measure introduces two potential methodological problems. First, it is probable that the same structural conditions that gave rise to lynchings during the first five years of a decade were also operating during the second five years. Fortunately, a partial remedy for this problem is readily available. Recall that the dependent variable for equation (1) in the Anselin technique is the number of lynching incidents that occurred during the first five years of the decade. The predicted values from that equation are used to construct the lynching exposure variable (eq. [2]). Construction of that measure uses all predicted values *except that for the target county, i*. Thus, by including the predicted value for county *i* in eq. (3), we have a control for prior black lynchings that is "purged" of the influence of the control variables. Second, by using what is similar to a lagged dependent variable in the second equation, we may introduce the potential for serial autocorrelation in our models. However, since the measure of prior black lynchings is a predicted value from the first-stage equation, it is quite different from a simple lagged dependent variable. This leads to greater stability in our lagged spatial term, as well as a reduced likelihood of autocorrelation. Nonetheless, we tested for the presence of autocorrelation and were unable to reject the null hypothesis of no autocorrelation in all three time periods.

Geographic.—The geographic location of the counties included in this investigation varied considerably. Some counties were buried in the heart of Dixie, while others bordered northern states in which lynchings were quite rare. In view of this geographic variation and the selectivity it may represent, we constructed the following trichotomy for classifying the counties in our analysis: (1) bordered a northern state, (2) bordered a southern state not included in the analysis, and (3) bordered only counties in the 10 states included in the analysis. The first two are included in our equations as dummy variables, allowing us to assess the extent of potential network sampling bias resulting from our inclusion of only the counties from the 10 southern states in our analyses (see, e.g., Marsden and Andrews 1991).¹⁸

¹⁸ Data to measure %black and %white tenants were drawn from a county-level file available through the Inter-University Consortium for Political and Social Research (ICPSR 1994). The denominator (number of improved acres of farmland) for our measure of cotton dominance was also derived from the ICPSR county-level file; but the numerator (acres planted in cotton) was obtained from county tables published as part of the decennial agricultural census (Bureau of the Census 1913; Census Office 1895, 1902). All three variables dealing with lynching (the dependent variable, number of prior white lynchings, prior black lynchings) were taken from the inventory of lynch victims mentioned in the text. Finally, the two geographic variables were constructed by referring to maps for the 10 southern states.

Method

The dependent variable in our equations, number of lynching incidents, is a positively skewed count variable. A rather large percentage of counties had no lynchings in each time period, with the frequency distribution tapering off relatively quickly at higher numbers of incidents. Ordinary least squares techniques may not be appropriate for obtaining solutions to equations with such dependent variables, given the nonnormal distribution of the error term (Cameron and Trivedi 1986; Lawless 1987). Therefore, we use Poisson regression techniques that are well suited to dependent variables with this type of distribution. Our equations include a correction for overdispersion or underdispersion in the dependent variable that can affect standard errors and therefore statistical significance. This correction has no effect on the estimated coefficients but can increase or decrease the standard errors.¹⁹ The results from the Poisson regression analysis can be interpreted much like the results from a logistic regression. That is, the coefficients reflect the effect of the predictor variable on the dependent variable. And, the chi-square value associated with a coefficient can be used to assess the statistical significance of the effect.²⁰

FINDINGS

Descriptive statistics for all variables are presented in tables 1 and 2. Table 1 presents frequency distributions for the number of lynching incidents occurring during each period. Two points deserve to be made about these distributions. First, it is clear that lynchings became less common between 1895 and 1919. For example, the percentage of counties experiencing *no lynchings* rose from 76.8% in the earliest period to 82.5% between 1905 and 1909 then increased further to 83.2% for 1915–19. Second, the nature of the distribution of lynching incidents in all three time periods clearly justifies the use of the Poisson rather than an OLS estimation procedure for our models. Means and standard deviations for all variables are presented in table 2 for the reader's information but will not be summarized.

¹⁹ We have used SAS's PROC GENMOD to conduct the Poisson regression analyses. The correction for overdispersion or underdispersion was done using the D-scale option. D-scale is estimated by taking the square root of the deviance/degrees of freedom, which becomes a multiplier on the estimated standard errors. See SAS Institute (1993) for more details about PROC GENMOD.

²⁰ Effects can be interpreted as a multiplier, e^{β} , on the expected number of lynching incidents. See Beck and Tolnay (1995) for a discussion of the use of Poisson regression models in historical research or Liao (1994) for a more general discussion.

TABLE 1
LYNCHING INCIDENTS: SOUTHERN U.S. COUNTY GROUPS

FREQUENCY DISTRIBUTIONS	1895-99		1905-9		1915-19	
	N	%	N	%	N	%
0	601	76.8	643	82.5	641	83.2
1	125	16.0	98	12.6	96	12.5
2	39	5.0	24	3.1	25	3.2
3	10	1.3	12	1.5	7	.9
4	6	.8	1	.1	1	.1
5+	2	.3	1	.1	0	.0

TABLE 2
DESCRIPTIVE STATISTICS FOR DEPENDENT AND INDEPENDENT VARIABLES:
SOUTHERN U.S. COUNTY GROUPS

VARIABLE	1895-99		1905-9		1915-19	
	Mean	SD	Mean	SD	Mean	SD
Lynching incidents .....	.34	.74	.25	.62	.22	.56
Lynching exposure .....	.25	.17	.20	.15	.15	.15
%black	33.81	24.55	33.91	24.93	32.79	24.53
%black ²	1,744.96	1,988.30	1,770.41	2,022.79	1,676.32	1,936.51
%white tenants	34.09	12.38	34.17	12.44	37.20	13.08
%white tenants ²	1,315.42	857.91	1,322.42	860.92	1,555.03	1,005.14
Cotton dominance	20.89	18.88	18.53	17.80	20.26	18.47
Prior black lynchings .....	.41	.24	.34	.22	.24	.21
Prior white lynchings .....	.07	.28	.03	.16	.01	.09
Borders a northern state ....	.03	.17	.03	.17	.03	.17
Borders a southern state outside the analysis .....	.08	.26	.08	.27	.08	.27
N of cases	783		779		770	

Table 3 presents the findings obtained from estimation of equation (3), which includes lynching exposure on the right-hand side of the equation.²¹ Two models are reported for each decade. Model 1 is a bivariate equation that includes only lynching exposure as a predictor. Model 2 is the full equation with all predictor variables. This presentation format is used so

²¹ We do not report the results obtained from eq. (1), which is used to derive the measure of "lynching exposure," and is, itself, of little substantive interest. However, the coefficients from that equation are available from the authors upon request.

that the impact of the control variables on the effect of lynching exposure can be assessed. Our primary interest in model 2 is in the coefficient for lynching exposure. A statistically significant coefficient implies that some type of lynching-related diffusion process was operating. A *positive* coefficient suggests a contagion process, while a *negative* coefficient indicates a deterrence process.

Looking first at model 1, for all three decades we find that lynching exposure has a *positive* bivariate effect on the observed number of lynching incidents—for the 1915–19 period, the coefficient attains statistical significance. Thus, the results for model 1 would lead us to believe that lynchings were either insensitive to events in other areas or *more* frequent in counties that were surrounded by other counties that had a large number of incidents. However, such a conclusion is premature. As mentioned earlier, the clustering of high lynching areas in the same general area may have been due to shared social, economic, or cultural characteristics that created an atmosphere conducive to the lynching of blacks. The primary purpose of the control variables added in model 2 is to take into consideration those potentially shared characteristics.

Indeed, the findings obtained from model 2 are substantially different from those observed for model 1. In all three decades, the coefficient for lynching exposure reverses sign and becomes significantly *negative* (at least at the $P < .1$ level). Net of all other variables in the model, the results in table 3 provide strong support for a deterrence diffusion process. That is, more intensive lynching activity in surrounding areas actually *decreased* the frequency of lynching incidents in southern counties. Looking at the evidence for individual time periods, we find the strongest impact of lynching exposure for 1905–9. The effects are relatively similar in 1895–99 and 1915–19, though somewhat weaker for the latter period. While we cannot offer a definitive explanation for the more powerful effect in 1905–9, we can suggest one possibility. In general, the control variables have stronger effects on lynching in 1905–9 than they do for the other two periods. For example, it is the only time period in which *all* of the controls, other than the geographic variables, attain statistical significance. Therefore, the set of control variables is doing a better job of accounting for the variety of other social forces that serve as the antecedents to lynching (and which are likely shared by nearby counties). By doing so, they are more effective at isolating the “true,” net impact of lynching exposure—which appears to be *negative* in all time periods.

Although not the focus of this analysis, some of the other findings reported in table 3 are worth noting. Two of the control variables have consistent and statistically significant effects on the number of lynching incidents across all three periods. As expected, the frequency of lynchings was related to the relative size of the black populations in counties. The

TABLE 3
COEFFICIENTS FOR POISSON REGRESSION OF NUMBER OF LYNCHING INCIDENTS ON LYNCHING EXPOSURE AND
SELECTED CONTROL VARIABLES FOR SOUTHERN U.S. COUNTY GROUPS

	1895-99		1905-9		1915-19	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Spatial effect term:						
Lynching exposure .....	.333 (.349)	-.983** (.437)	.458 (.435)	-2.406*** (.580)	1.728*** (.325)	-.768* (.449)
Demographic controls:						
%black .....		.095*** (.026)		.115*** (.023)		.122*** (.016)
%black ²		-.0009*** (.0003)		-.0008*** (.0002)		-.001*** (.0002)
Socioeconomic and cultural controls:						
%white tenants .....		.060** (.029)		-.095*** (.024)		-.028 (.023)
%white tenants ²		-.001** (.0005)		.001*** (.0003)		.0003 (.0003)

Cotton dominance .....	.024*** (.008)	.044*** (.011)	.026** (.011)
Lynching history controls:			
Prior black lynchings	-1.519 (1.060)	-3.057** (1.507)	-1.083 (.837)
Prior white lynchings .....	.257 (.278)	.992*** (.335)	1.716*** (.542)
Geographic controls:			
Borders a northern state .....	.070 (.516)	.000* (.470)	1.173* (.628)
Borders a southern state outside the analysis	-.426 (.343)	.067 (.344)	.590 (.382)
Scale	1.041	.955	.901
Intercept	-1.162*** (.112)	-1.501*** (.116)	-1.803*** (.096)
Pseudo R^2	.001	.115 .001	-4.104*** (.508) .217

NOTE.—SEs are in parentheses.

*Coefficient and SE have been divided by 100,000 to adjust the scale; see n. 22.

** $P < .10$.

*** $P < .05$.

**** $P < .01$.

signs of the coefficients for %black and %black² are consistent with Black's economic threat model—with the positive impact of %black growing weaker at higher concentrations of black population. Also consistent with our expectations is the finding that lynchings were more common in agricultural economies more dominated by cotton cultivation. The other control variables are less consistent in their effects. White tenancy is significantly related to lynchings in the two earlier time periods, though the form of the relationship changes. The number of prior white lynchings has a positive effect in all time periods, which is statistically significant for 1905–9 and 1915–11.

The effect of prior black lynchings in the county, though statistically significant only in 1905–9, tends to buttress our inference of support for the deterrence model. That is, other things equal, there were *fewer* lynchings in counties that had experienced more lynching incidents during the previous five years. Although open to alternative interpretations, this finding may indicate that whites and/or blacks also modified their behavior following lynchings *within* the county in such a way that the likelihood of subsequent lynchings was reduced.

Finally, it is reassuring that the geographic variables are largely non-significant as predictors. The single exception is the *larger* number of lynchings in counties bordering omitted northern states in 1915–19. Surprisingly, the coefficient for the dummy variable representing those counties has a positive sign. Further examination of those counties, all of which are in Kentucky, revealed nothing unusual. Indeed, only two of them experienced a lynching during the period. Thus, it is possible that the significant effect of the northern-boundary variable is due to (1) the small number of counties ($n = 23$) bordering the North that were included in this analysis and (2) the pattern of values for those counties on other predictors in the equation.²² Despite this exception, we believe it is safe to conclude that network sampling bias is not a serious problem for our analyses.²³

²² It is likely that the results from eq. (1) from the Anselin technique also contribute to the significant coefficient for the northern-border variable in eq. (3). The coefficient for that variable in eq. (1) is -21.702 ($SE = 44,311.660$). Those results are undoubtedly due to the fact that there were no lynching incidents in those counties during 1910–14, the dependent variable in the first equation. Note the similar effect in the second stage estimation for 1905–9.

²³ We have examined two alternative methodological approaches that yield essentially identical substantive findings to those reported here. First, the results of the Anselin technique are replicated when the Land and Deane (1992) two-stage least squares approach is applied. Second, if the modified Poisson regression technique used to estimate the second equation in the Anselin method is replaced by a logistic regression equation, it is possible to examine spatial effects on the likelihood of *any* lynchings

DISCUSSION

Most cross-sectional analyses of social phenomena assume that the events in one location are independent of events in other locations. And, when it is thought that this assumption may not be justified, some analysts correct for the suspected spatial autocorrelation simply to obtain unbiased parameter estimates. Increasingly, however, it is being recognized that the spatial dependence of events may be of interest for substantive as well as methodological reasons (see, e.g., Blau, Land, and Redding 1992; Land and Deane 1992; Land et al. 1991; Tolnay 1995). The terroristic function of southern lynchings during the late 19th and early 20th centuries points to the possibility of a substantively interesting spatial dependence in the activities of white mobs.

We articulated two very different types of spatial dependence that may have influenced the geographic distribution of southern lynchings. The contagion model hypothesizes a *positive* association between the levels of lynching in nearby areas and is basically compatible with diffusion effects that have been inferred for other types of social phenomena. The deterrence model predicts that the frequency of events in a given locale will be *depressed* by similar events in other areas. Our findings are strongly supportive of the deterrence model for the three time periods examined: 1895–99, 1905–9, and 1915–19. Net of other social characteristics that have been shown to affect the likelihood of lynchings, the intensity of mob violence in nearby areas was found to be *negatively* associated with the corresponding frequency in other areas.

How can we account for this negative spatial dependence of lynchings? We have suggested two possible interpretations. Perhaps whites were satisfied that lynchings elsewhere, especially those nearby, were sufficient to send the appropriate terroristic “message” to blacks in their own community. In other words, even whites in counties that did not lynch or lynched less frequently participated in vicarious violence through the activities of white mobs in other areas. Or, perhaps blacks were persuaded by lynchings in nearby counties to be even more circumspect in their interactions with whites so as not to provoke violent responses. Our own preference is for the vicarious violence explanation, which emphasizes the motivation of the white population. Given the nature of southern race relations during this era, most blacks were very aware of the potential for mob violence. Most did not need to be reminded of the threat periodically by lynchings in neighboring areas (or their own county for that matter). Furthermore, the variety of “offensive” behavior for which blacks were

occurring in the target county *i*. Like the results reported in table 3, lynching incidents in other counties reduced the likelihood of any lynchings in the target county.

lynched suggests that even the most deferential and careful behavior did not necessarily guarantee immunity from mob violence. For instance, some of the black victims in this inventory were lynched for such trivial reasons as "indolence," "unpopularity," and "gambling,"—though the most common justifications for lynching were the far more serious offenses of murder, rape, or assault.

Despite our preference for an interpretation that emphasizes the behavior of whites, it is likely that blacks also modified their behavior in reaction to lynchings. Given the severity of lynching as a sanction, the black community may have been willing to go to great lengths to avoid mob violence—and the incentive to do so was likely strengthened by a recent lynching. Richard Wright (1966, p. 190) certainly implied such a willingness when he wrote, "The things that influenced my conduct as a Negro did not have to happen to me directly; I needed but to hear of them to feel their full effects in the deepest layers of my consciousness. Indeed, the white brutality that I had not seen was a more effective control of my behavior than that which I knew."

It is impossible to adjudicate between these two interpretations for our findings, given the data at our disposal. Much greater detail about specific lynchings, including events before and after the incidents, is required to make such a determination. Perhaps the "event-structure analysis" described by Griffin (1993) is a more appropriate methodology for this challenge than is our own cross-sectional comparative approach. However, until additional evidence is compiled, it is probably reasonable to assume that responses by both the black *and* white communities were responsible for the negative spatial effect.

The negative spatial effect inferred from our analyses carries an additional, significant implication—that is, apparently southern whites were not swept up in the hysteria of lynching, as might have been suggested by a *positive* spatial effect consistent with the contagion model. Rather, our findings are more consistent with an interpretation of southern lynchings as calculated terrorism, leading to a desired end. When they felt it was required, whites were quite willing to get out the rope and faggot to send a threatening message to their black neighbors. However, when they believed that the message had already been sent by lynch mobs in other areas, they were content to forgo the violent ritual. These findings are a testimonial to the potential effectiveness of state-tolerated terrorism as a strategy for maintaining the status quo. In this case, that meant the perpetuation of caste-based social relations that virtually guaranteed the social and economic subordination of African-Americans in the South.

The potential exists, of course, for substantively meaningful spatial effects in many of the phenomena studied by social scientists—both modern and historical. Relatively recent methodological innovations make more

feasible the incorporation of spatial effects in our quantitative analyses. As demonstrated by our investigation of southern lynchings, the findings yielded by such models can make important contributions to our understanding of how events in one area can transcend geographic boundaries to influence outcomes in other areas. Furthermore, our findings demonstrate that it is inappropriate to assume that only *positive* diffusion or imitative processes operate for social phenomena. The likelihood or frequency of some phenomena can also be attenuated by incidents occurring elsewhere.

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