RACIAL RIOTING IN THE 1960S: AN EVENT HISTORY ANALYSIS OF LOCAL CONDITIONS*

Daniel J. Myers
University of Wisconsin, Madison

Using Spilerman's (1970b) data on the timing and locations of race riots from 1961 to 1968, I use event history analysis to investigate the effects of local conditions on city-level hazard rates of rioting. First, several structural strain and social-psychological arguments, which were the focus of Spilerman's original studies, are reexamined in light of event history analysis. Second, I reinterpret ethnic competition arguments recently used to explain a wide variety of collective violence, and apply these ideas to the 1960s' riots. Third, I test two models of the diffusion of rioting. Like previous analyses, my findings fail to support structural strain theories. Contrary to previous analyses however, the size of the non-White population is not the singular predictor found for the 1960s' riot locations. Instead, my results support both competition and diffusion arguments.

During the 1970s, Spilerman (1970a, 1971, 1972, 1976) published an influential set of studies examining racial rioting in the 1960s. For many, this research became the definitive word on the 1960s riots, and it remains influential today (McPhail 1994). Spilerman examined a number of theoretical explanations for the occurrence and severity of riots, including structural strain arguments (Smelser 1962), absolute deprivation (Downes 1968), relative deprivation (Gurr 1968, 1970), unresponsive political structures (Lieberson and Silverman 1965), and geographical contagion (National Advisory Commission on Civil Disorders 1968). In summary, he concluded that differences among cities were unrelated to the frequency and severity of rioting. In fact, only two variables, the size of the non-White population and a dummy variable for region in the United States, were better predictors of riots and their severity than the 16 theoretical indicators combined.

Despite the apparent clarity of Spilerman's findings, scholars did not abandon the theoretical constructs he tested. Much subsequent research has attempted to challenge his findings and revive older explanations of the 1960s riots (for reviews, see Bryan 1979; McPhail 1994; McPhail and Wohlstein 1983; Schneider 1992). Despite slight deviations, however, the results of these studies generally support Spilerman's findings: The size of the non-White population accounted for the majority of the variance of riot frequency explained, and other theoretical variables explained only small increments beyond it.

Ultimately, however, there is still a considerable lack of agreement about what factors should remain under consideration as potential causes of rioting. Some scholars conclude that structural strain explanations and other social-psychological explanations have been thoroughly trounced and that new approaches must be developed to identify the underlying determinants of rioting and other collective behaviors (McPhail 1994). Others maintain the worthiness of grievance and deprivation explanations and continue to invoke slightly recast versions of these theories (Heskin 1985; Koomen and Frankel

* Direct correspondence to Daniel J. Myers, Department of Sociology, 1180 Observatory Drive, Madison, WI 53706 (myers@ssc.wisc.edu). I thank Pamela Oliver, Gerald Marwell, Charles Halaby, Seymour Spilerman, Robert Mare, Alberto Palloni, Ronald Wohlstein, Ralph Turner, Alexandra Corning, and the *ASR* reviewers for comments on earlier drafts. Parts of this paper were presented at the 1995 annual meeting of the American Sociological Association in Washington, D.C.

1992; Polletta 1992). These ideas may continue to be popular in part because of the ambiguity resulting from different samples and methods, or simply because "it is very difficult to abandon old explanations" (McPhail 1994:5). However, the continued attractiveness of these previous explanations may hint that the empirical examinations that tested them were inadequate analyses of the processes underlying rioting. This question can be answered by critically examining previous empirical work using new analytical procedures and recent theoretical developments that are better suited to the problem.

Thus, I reexamine Spilerman's data on racial rioting in the 1960s using event history analysis. First, I closely follow his analysis, re-examining his conclusions regarding the structural strain and deprivation arguments. Then, I investigate two additional explanations for rioting—one based on notions of social diffusion and the other based on Olzak's (1987, 1992) recent work on ethnic competition.

BACKGROUND

Structural Strain and Deprivation

Spilerman (1970a, 1971, 1976) conducted his analysis of the outbreak and severity of riots by grouping structural strain and other related structural explanations into four basic clusters and adopting indices for each cluster of arguments (Spilerman's variable clusters appear in the stub of Table 2 on page 103). His first variable cluster tested the "social disorganization thesis"—that poorly integrated individuals are outside the general control of community norms and have less access to traditional mechanisms for addressing social grievances (Downes 1968). Spilerman's second and third clusters of variables examined the "absolute" and "relative" versions of deprivation arguments. The absolute deprivation argument posits that the most severely dispossessed in society will be the ones who engage in collective violence (Downes 1968). The relative deprivation argument (Gurr 1968, 1970) states that a disadvantaged group determines its own level of social and economic deprivation by comparing itself to some reference group; in the case of Spilerman's studies, Blacks would develop a sense of relative deprivation by comparing their situation to that of proximal Whites.

Spilerman's third variable cluster tested the "expectations" argument (Berkowitz 1968) in which expectations for improved social and economic conditions increase as the disadvantaged group's position improves, thereby leading to heightened frustration if the rising expectations are not met. In this argument, the opposite relationship between deprivation variables and racial rioting is hypothesized: As conditions *improve* for Blacks, an increase in expectations, frustration, and ultimately the number of riot events occurs.

Finally, Spilerman tested the idea that the lack of access to political representation increases rioting (Lieberson and Silverman 1965): With no way to address grievances or to have group interests represented in governmental decision-making bodies, Blacks may turn to violence as a method of expressing their demands. As noted above, Spilerman (1970a) found little or no support for any of these arguments in his initial work, in which the frequency of rioting was the dependent variable. When riot severity was the dependent variable and also failed to show support (Spilerman 1976), these ideas were further discredited.

In addition to the original four arguments, Spilerman (1970a) also noted several other potential sources of the tendency to riot, but he provided only partial tests. Of these, I examine *competition* and *diffusion*.

Competition Models

Competition for scarce resources is often assumed to be a key process underlying most conflicts. When two or more groups compete for a common pool of resources, they inevitably come into conflict, and as the demand for a good increases and the supply decreases, the conflict will increase. Park (1950) applied such an economic model to ethnic and racial conflict. His faith, however, that assimilation would in time relieve ethnic conflict and lead to peaceful accommodation has not been substantiated; thus, the continued application of economic competition models to ethnic conflict in general and ethnic collective violence in particular (Lieberson and Silverman 1965; Nielsen 1985; Olzak 1987, 1992; Olzak and Nagel 1986;

Shorter and Tilly 1974; Spilerman 1970a, 1971, 1976; Tilly, Tilly, and Tilly 1975; Tolnay and Beck 1995).

Olzak's (1992) recent work offers a promising model that connects economic processes with collective action using ethnic competition as its main mechanism. Her study of ethnic conflict and protest supports three main competition mechanisms: (1) The breakdown of labor market segmentation leads to increased competition between ethnic groups, thereby leading to increased conflict and collective action; (2) immigration increases competition directly (Bonacich 1972; Lieberson 1980) and also through its effects on labor market segmentation; and (3) economic contraction exacerbates competition and conflict as it increases competition for employment.

While Olzak's analysis is compelling, the collective violence she and others attempt to explain is predominantly that of Whites against ethnic and racial minorities. Rioting in the 1960s, however, was an exception to that pattern. Therefore, if ethnic competition arguments are to be used to explain the Black-initiated property riots of the 1960s, the arguments must be congruent with minority-initiated as well as majority-initiated collective violence.

I propose that while changes in competition may in fact change the levels of collective violence, predicting who will *initiate* the violence and who will be the *target* of violence requires knowledge of the outcomes of increased competition. In the cases examined by Olzak, White-initiated violence in response to labor market de-segregation makes intuitive sense because White advantage is threatened by desegregation. However, applying the labor market desegregation argument to Black riots is problematic because it is not clear that Blacks would respond to improved market positions with violence against Whites. Yet it is possible that decreased labor market segregation could lead to violence by Blacks if desegregation led to *worse* market positions for Blacks. Consider the possibility that desegregation resulted from White invasion of labor niches traditionally dominated by Blacks; the result for some Blacks thus would be unemployment. Rather than an improved labor market position for Blacks, desegregation would have the opposite effect. Black-initiated violence is more easily understood under such circumstances.

Using the above insight, I treat *non-White unemployment* as an indicator of competitive labor market outcomes that disadvantage Blacks. I also incorporate variables indicating increased competition in the traditionally Black labor market stemming from *non-White migration* to a city and *all immigration to a city from outside the United States.* Both of these variables are particularly relevant to the 1960s because of high levels of interstate migration of Blacks and increasing immigration throughout the 1950s and 1960s. And because competition theory predicts that economic downturns exacerbate any competition-driven ethnic violence, I include indicators of *general economic contractions* in the analysis. Finally, I examine *interactions between immigration and economic conditions* implied by competition arguments. Intuitively, the effect of any in-migration should be greater when the economic situation is poor in a particular city (Olzak 1989b). Conversely, an influx of foreign immigrants or American non-Whites should have a smaller effect on competition and subsequent violence when the economy is faring well.[1]

Diffusion of Rioting

Diffusion refers to a process in which the occurrence of an event to one member of a population changes the likelihood of such an event occurring to other members of the population (Strang 1991). So when a riot occurs in one city in the United States, the rates of future rioting in other cities are hypothesized to increase as a result. Many analysts have recognized that collective protests and collective violence tend to cluster both temporally and geographically (McAdam 1982; Pitcher, Hamblin, and Miller 1978; Olzak 1987; Koopmans 1993; Lichbach 1985; Diekmann 1979). This is not imitation or mindless copying, (as was the view in early contagion theories (see McPhail 1991 for a review). Instead, it is viewed as a social learning process in which the favorable outcomes of others'

[1] For a complementary analysis of racial rioting that also supports competition theory, see Olzak and Shanahan (1996).

collective behaviors provides a model for subsequent protests (Pitcher et al. 1978).

The process of social diffusion is driven by a variety of communication processes among established social networks (Hamblin, Jacobsen, and Miller 1973; McPhail and Wohlstein 1983; Paige 1971). These networks may be defined by friendship and family connections, or they may be more dispersed, as when individuals are connected through the mass media (Oliver 1989). For example, Rudé (1964, 1972) documented that rebellion in England and France during the eighteenth and nineteenth centuries diffused along major transportation routes suggesting that information about collective actions was being communicated by travelers along trade routes. More recently, the mass media and the telephone have been considered to be the most prominent communication modes driving the diffusion of collective behavior (Spilerman 1970a; Morris 1984). Clearly, the telephone is more apt to be used by networks of acquaintances, while the mass media has a more widely dispersed influence governed in scope by its audience (i.e., a national or local audience) (Oliver 1989).

I assume that these communication networks are geographically concentrated. Friends and family (and thus their face-to-face and telephone contacts) are likely to be geographically concentrated. And, although some riots receive national media attention, media coverage of riots and civil violence is generally concentrated in the regions where they occurred. Thus, while a large riot in Detroit may receive national newspaper and television coverage, news broadcasters and newspaper editors in and around Michigan would devote higher proportions of their coverage to the riot than would the media in Texas or Florida. Small riots that receive regional media attention may not be covered nationally and therefore may be completely unknown to people in distant regions.

Any adequate model of a diffusion process must identify the underlying factors that account for variation in the "contagiousness" of a social phenomenon. The two most important of these factors are temporal proximity and spatial proximity (Hamblin et al. 1973; Rogers 1983; Brown 1981; Mahajan and Petersen 1985; Strang and Tuma 1993). In the case of riots and other collective events, spatial proximity is usually indicated by geographic distance (Hedström 1994; Spilerman 1970a), and temporal proximity is indicated by the amount of time that has passed since a collective event (Olzak 1987, 1992). I use spatial and temporal proximity to create three diffusion indicators.

The first diffusion variable is a declining function of geographical distance between a given city and each city that experienced a riot at time $t - 1$. The amount of *contagion*, c_t, experienced by a given city at time t is thus given by:

$$c_t = \sum_j d_{ij}^{-1} m_{j,t-1}, \qquad (1)$$

where d_{ij} is the distance in miles between two cities, i and j, and m is a dummy variable indicating whether or not a riot occurred in city j at time $t - 1$. This contagion variable tests the hypothesis that riots in one city increase the likelihood of rioting in other cities and that other riots are more likely in cities closest to where the original rioting occurred.

Given that diffusion is driven by communication processes, the media in particular, an alternative pattern of diffusion may have operated in the 1960's rioting. Given the substantial national media coverage of the riots, particularly of large riots, rioting may have diffused nationally rather than regionally. In other words, the proximity of cities may have been irrelevant if all cities nationally received equivalent information about the riots as they occurred. To test for this possibility, I examined two additional diffusion variables. The first variable measures the *number of riots* in the United States at time $t - 1$ (M_{t-1} where $M_{t-1} = \Sigma m_{j,t-1}$). This variable assumes that a riot in any city has an equal effect on other cities, regardless of relative locations. The effect of the number of riots at time $t - 1$ may not be linear however. The first riot at $t - 1$ may contribute substantially to the occurrence of additional riots, but the tenth riot may contribute little more beyond that contributed by the ninth riot or may even decrease the likelihood of rioting. To reflect this possibility, I incorporate the number of riots squared, $(M_{t-1})^2$, in the analysis.

Unlike other social diffusion processes, such as the adoption of a new technology (Hamblin et al. 1973; Rogers 1983), disruptive protest activities do not continue to diffuse unabated. Rather, protest activity initially accelerates, then peaks, and then begins to decline. In the case of rioting, each riot subsequent to the apex slows the rate of rioting, almost as if the process were becoming distasteful to its participants. This exhaustion effect has been hypothesized to result from either the tiring and calming of the participants or the increase in repressive mechanisms by agents of social control (Kelly and Isaac 1984; Koopmans 1993; Oberschall 1978). Several analyses have suggested that the diffusion and exhaustion processes for collective violence require relatively brief periods. Olzak (1987) found the diffusion-exhaustion cycle to be completed within a period of 30 days. With regard to the 1960s rioting, the Kerner Commission report (National Advisory Commission on Civil Disorders 1968) suggested that events clustered in two-week periods. Given these observations and the nature of the data on 1960s riots, I estimate four sets of models using rioting in the past one week, the past two weeks, and the past four weeks. Models using the one-week period were clearly superior; the addition of longer time periods did not improve prediction over the one-week model. Therefore, here I present only models using the one-week measures.

What Can and Cannot Be Explained

Every analysis is bounded by the scope of the data examined, and the current study is no exception. As were previous studies of the 1960s riots, this analysis is also limited by two key aspects of the data: their temporal scope and their units of analysis. Because the data I examine are limited to the 1960s and compare city-level characteristics, they cannot explain the rise of the unprecedented wave of Black-initiated rioting that occurred in the 1960s. A different type of data set, which provides information on long-term national conditions, is necessary to explain the riot wave (see McAdam 1982; Jenkins and Eckert 1986; and Kelly and Isaac 1984 for empirical investigations of these long-term trends and contexts). In fact, it is exactly this limitation that led Spilerman (1970a) to conjecture about the causes of Black-initiated rioting in the 1960s. Given that Spilerman did not find any city-level differences, he concluded that rioting must be the product of a national phenomenon. Drawing on Tomlinson (1968), Spilerman suggested that the process was actually driven by nationwide conditions that affected all Blacks and by the acceptance of a "riot ideology" among all Blacks; therefore riots would break out randomly, and when and where were governed only by the number of available rioters.

Thus, the current data cannot provide for comprehensive tests of theories about the *causes* of racial rioting; but they can be more appropriately applied to the question of which cities were more likely to experience rioting *given that the riot wave was occurring*. Conclusions drawn from this data must take into account these limitations. Thus, my aim is to examine differences in local conditions and to determine if these differences contributed in any systematic way to the pattern of rioting observed during the 1960s.[2]

DATA

The riot data were collected by Spilerman (1970b), who cataloged urban riots in the United States for the years 1961 through 1968. He used these in three important studies that tested alternative explanations of riot frequency and riot severity (Spilerman 1970a, 1971, 1976). His original data were drawn from a number of sources, including the Congressional Quarterly's *Civil Disorder Chronology*, the *New York Times Index*, the *Report of the National Advisory Commission on Civil Disorders*, and the Lemberg Center's *Riot Data Review* (for details, see Spilerman 1970a, 1970b). The 673 cities included in the data are located in the contiguous United States and had populations of at least 25,000 in 1960. For each city, the weeks in which a riot occurred are recorded from the beginning of 1961 through the end of 1968.

[2] Although the data I analyze do not speak to long-term cycles of collective behavior, evidence is mounting indicating that competition processes contribute to long-term patterns of collective violence (Olzak 1992). Olzak's work and the results of the present study suggest that competition arguments provide strong hypotheses for explaining long-term patterns of racial rioting.

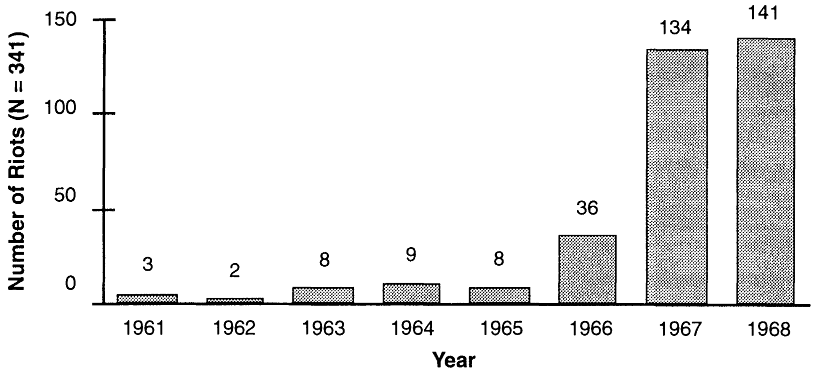

Figure 1. Distribution of Riots by Year in 410 U.S. Cities: 1961 to 1968

For the current study, I further reduced the set of cities examined by eliminating those that had 1,000 or fewer non-Whites in 1960. My rationale for this procedure was that a critical mass of Blacks was necessary to cause rioting. Obviously, a city with no Blacks cannot experience a spontaneous riot, and including cities with few or no Blacks has a powerful effect on the statistical relationship between non-White population size and racial rioting. With no correction, a large portion of the relationship between non-White population size and rioting would be due to the fact that Blacks must be present for Black riots to occur. This rather uninteresting finding would confound subsequent interpretations of the effects of non-White population size on rioting. A more interesting question asks whether increases in the non-White population above an essential minimum increase the likelihood of rioting. Spilerman (1971) provides evidence suggesting that the critical number of Blacks needed for rioting in the 1960s was somewhere in excess of 1,000. Therefore, I chose a non-White population of at least 1,000 as the critical criterion for including a city in the study. I eliminated 263 cities by this procedure, and it is not surprising that none of these cities experienced a riot during the study period.

Riots included in Spilerman's (1970b) data were those involving at least 30 people, that resulted in violence or the destruction of property, and that were not focused on institutional conflicts (such as those in schools and union halls). Spilerman also classified riots into five types according to the race of the participants and whether the riot was "spontaneous" or arose from a protest (e.g., a civil rights demonstration). Because Spilerman was primarily concerned with random rather than coordinated rioting and because he wished to reduce heterogeneity among the types of riots, he limited his analysis to spontaneous Black aggression: This accounted for 341 separate riot events from 1961 to 1968 (see Spilerman 1970b for details). In the interest of comparability with Spilerman's and subsequent studies and because Spilerman's documentation suggests that his tabulations of the other types of riots may be incomplete, I also limit my analysis to spontaneous Black aggression. Figure 1 presents a tabulation of spontaneous Black riots by year in the 410 U.S. cities in the study.

The *Governmental Units Analysis Data, 1960* (Alford and Aiken 1970) provides the city-level economic, structural, and political information used as independent variables in both this study and in Spilerman's studies. The sources of these data are documented in Alford and Aiken (1970) and include the *1960 Census* and *The Municipal Yearbook.*

ANALYSIS

Past Analysis of Racial Rioting

Since the eruption of racial rioting in the 1960s, research methods for examining riot patterns have made important advances. Efforts prior to Spilerman's landmark study had employed pairings of similar cities, one of which had experienced rioting and another which had not (Lieberson and Silverman 1965). As riots occurred in more and more cities throughout the 1960s, adequate pairs of riot and non-riot cities matched on region and population size became increasingly difficult to find. Furthermore, these paired-city studies allowed only a dichotomous classification of cities (riot or non-riot), thereby ignoring differences among cities in which more than one riot had occurred. In response to these problems, Spilerman (1970a) took a large step forward when he used multivariate analysis in which the number of riots in a city was the dependent variable. Since that study and his subsequent examination of riot severity (Spilerman 1976), most studies have used some version of multivariate linear regression to examine both riot occurrence and riot severity (Carter 1986, 1990, 1992; Dotson 1974; Jiobu 1971; McElroy and Singell 1973).

Despite the advances of the multivariate approach, the techniques used were not ideally suited for examining riot data. The first problem arises from using frequencies as the dependent variable. While this approach includes more information than does a dichotomous indicator, it nonetheless represents the set of riots as more homogenous than it actually is. In particular, any temporal relationship within the riots is ignored. That is, a different underlying process may operate for riots that are temporally clustered than for those that are spread evenly across the time period studied.

A second important shortcoming of previous analyses is their inability to introduce covariates that change over time, a particularly difficult problem when attempting to understand diffusion processes (Olzak 1992). Faced with such a limitation, Spilerman (1970a) selected one major riot incident and attempted to discern geographic diffusion effects. Although his results did not support geographic diffusion, the method itself makes the results unconvincing. In addition to limiting the analysis to only one incident, Spilerman also chose a large, nationally publicized riot (in Newark, New Jersey) as the incident hypothesized to produce diffusion. Because of the large amount of publicity associated with this riot, geographic diffusion effects would be much less apparent than in the case of riots that warranted less national publicity. Furthermore, Spilerman's procedure ignored the possibility that a riot other than a large, nationally publicized one could have diffusion effects. In short, to draw a legitimate conclusion, a comprehensive analysis of the data must incorporate explanatory variables that change as functions of both geographic proximity and time.

Event History Analysis

In response to some of the shortcomings of earlier approaches to rioting, I apply survival analysis or event history analysis to the data described above (Tuma and Hannan 1984; Allison 1984; Yamaguchi 1991). Rather than differentiating cities on the basis of the presence or the number of riots, event history analysis focuses on the duration of time between riot events for each individual city. By approaching the analysis of events in this way, researchers can examine processes that cluster differently in time and use time-varying covariates to examine dynamic processes (see Olzak 1989a and 1992 for a complete discussion of using event history analysis to analyze collective action events).[3] Recently, Olzak (1989b,1990, 1992; Olzak and West 1991) has successfully applied event history analysis to a number of different types of collective events, including labor strikes, ethnic violence, lynching and the establishment of ethnic newspapers.

Formally, an event history analysis that models an event that can occur at any point in continuous time specifies the instantaneous rate of transition from one state to another; it is defined as

$$\lambda(t) = \lim_{\Delta t \to 0} \frac{P(t \le T < t + \Delta t \mid t \le T}{\Delta t},$$

where T is the time of the event and $\lambda(t)$ is the hazard rate. In other words, the instantaneous hazard rate (the hazard rate at a given instant) is a function of the probability that an event will occur between t and $t + \Delta t$, given that it has not yet occurred at time t. In this study, this hazard rate is the instantaneous probability that a riot will occur in a given city, given that the city is not rioting as it enters the time point in question.

[3] As in many studies, limitations in the current data prevent broad application of time-varying covariates. Therefore, time-varying variables are limited to the control variable for prior rioting and the variables critical to representing diffusion processes.

I model the hazard of rioting using the proportional hazards model and estimate parameters using the method of partial-likelihood (Cox 1972).[4] Parameters are estimated using an ordinary maximization routine such as the Newton-Raphson algorithm by maximizing

$$PL=\prod_{i=1}^{I}\left[\frac{\exp\left[\sum_{k}\beta_k x_{ik}(t_i)\right]}{\sum_{j\geq i}\exp\left[\sum_{k}\beta_k x_{jk}(t_i)\right]}\right]^{\delta_i},$$

where t_i is the time of occurrence of either an event or censoring, the βs are coefficients estimating the effects of the k hypothesized explanatory variables, and δ_i is a dummy variable that indicates whether the event associated with case i was censored ($\delta_i = 0$) or was a failure ($\delta_i = 1$). The coefficients generated are most readily understood by interpreting e^{β} (the hazard ratio) as the amount by which the hazard is multiplied for each unit increase in the related independent variable.

In event history analysis, the effects of unobserved heterogeneity must be carefully considered (Allison 1984; Yamaguchi 1991). Of particular concern here is the lack of independence among repeated observations made on the same city that occurs when all sources of inter-city dependence are not accounted for in the estimated models. Because it is impossible to know if all relevant variables have been included, unobserved heterogeneity usually introduces a downward bias in standard error estimates. In the data studied here, 76 cities experienced more than one spontaneous Black-initiated riot (up to a maximum of 11 in Chicago), therefore the present analysis is highly susceptible to this problem.

Many methods have been suggested to correct for bias introduced by unobserved heterogeneity in survival analysis (Allison 1984; Flinn and Heckman 1982a, 1982b; Heckman and Singer 1982, 1984; Yamaguchi 1986; Tuma 1985; Trussell and Richards 1985). Of these, a number of general methods require assumptions either about the distribution of unobserved characteristics or the functional form of the baseline hazard; none of which are tenable for the present analysis. Therefore, I correct for unobserved heterogeneity by incorporating a control variable: the number of prior riots that have occurred in a city. Including variables that represent the prior history of the individual city is a practical procedure which minimizes the effects due to correlation within the same city and does not demand the restrictive assumptions of more general methods (Allison 1984).[5]

RESULTS

Spilerman's Analysis Revisited: Disorganization, Deprivation, and Political Structure

Spilerman's (1970a) analysis of riot frequency led him to draw a number of conclusions about propensities to riot. In summary, he found that non-White population size and region (south versus non-south) were by far the most powerful predictors of riot frequency. These two variables subsumed nearly all the effects of the variables representing social disorganization, deprivation, and political structure arguments. He concluded that ". . . the racial disturbances of the 1960s were not responses to conditions in the local community," and that non-White population size was really the only relevant variable: "[T]he larger the Negro population, the greater the likelihood of a disorder. Little else appears to matter" (p. 645).

Tables 1 and 2 present analyses that parallel those conducted by Spilerman (1970a). Table 1 reiterates a portion of Spilerman's Table 6, reporting the increments in the variance of riot frequency explained. It also presents an event history analysis analogous to Spilerman's. I tested the same variables ac-

[4] For the basics of survival analysis and partial-likelihood estimation see Tuma and Hannan (1984), Cox (1972), Allison (1984), and Yamaguchi (1991). Details on the application of event history and partial likelihood to the riot data used herein are available from the author.

[5] False duration dependence due to different risk levels among unidentified strata within the sample also can arise in survival analysis. However, this problem is not relevant here because the approach to repeated events does not allow the membership of the population at risk to vary over time. Details regarding this issue as well as alternative methods considered for controlling unobserved heterogeneity in the riot data are available from the author.

Table 1. A Comparison of the Results of Spilerman's Analysis with Results from Event History Analysis

	Regression Analysis of Riot Counts Spilerman (1970a)		Event History Analysis			
	(1)	(2)	(3)		(4)	
Variable Cluster [a]	Percent of Variance Explained by Non-White Population when Entered after Variable Cluster and South	Percent of Variance Explained by Variable Cluster when Entered after Non-White Population and South	Likelihood Ratio Test Comparing Model with Variable Cluster and South to Same Model Adding Non-White Population χ^2	(d.f.)	Likelihood Ratio Test Comparing Model with Non-White Population and South to Same Model Adding Variable Cluster χ^2	(d.f.)
(A) Social disorganization	43.1	2.3	179.32***	(1)	8.33*	(3)
(B) Absolute deprivation	40.6	.1	187.28***	(1)	2.42	(4)
(C) Relative deprivation	27.7	1.3	126.04***	(1)	2.68	(5)
(D) Political structure	19.2	.9	137.58***	(1)	12.95*	(4)
All variables except non-White population	9.3	4.5	70.04***	(1)	30.86*	(16)

[a] See the variables listed in Table 2 for indices that Spilerman included in each variable cluster. Numbers in parentheses are degrees of freedom.

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

cording to their contribution to the hazard rate of rioting; the values reported are increments in chi-squares resulting from a likelihood ratio test comparing two models. Although minor differences exist, an obvious parallel occurs between these results and Spilerman's regression analysis. The increment gained by adding non-White population to each variable cluster is large (columns 1 and 3) compared with the increment gained by adding the variable cluster after non-White population size (columns 2 and 4). Furthermore, while two variable clusters produce significant gains when added after the south dummy variable and non-White population, the improvement is marginal.

Despite their seeming clarity, interpretation of these results is problematic because of collinearities among the variables. In Spilerman's analysis, 51.3 percent of the variance in riot frequency was explained by the four variable clusters in Table 1, and an additional 9.3 percent of the variance was explained by non-White population size. Thus 42 percent of the variance in riot frequency was explained by the four clusters of variables. Taken together with the result that 46.8 percent of the variance was explained by only non-White population and the south dummy variable, these findings mean that there is a large overlap among non-White population size, the south dummy, and the variables in the four clusters. This multicollinearity is also apparent in the event history analysis presented in Table 2. Models run with the individual variable clusters (Models A through D) show many significant relationships between the theorized variables. As the models are combined and Spilerman's key variables are added, nearly all of the theoretical variables become nonsignificant.

Due to these patterns of collinearities, results relying on variance explained or comparisons of models using likelihood ratio tests fail to provide convincing evidence against the theories tested or against the notion that community conditions contribute to rioting. Rather than interpreting the differences in community conditions as negligible, a more reasonable interpretation is that differences are related to rioting, but that the conditions are related to the size of the non-White population. In fact, the relationships

Table 2. Partial-Likelihood Estimates Showing the Effects of Social Disorganization, Deprivation, and Political Structure on Hazard Rates for Racial Riots: 410 U.S. Cities, 1961 to 1968

Independent Variable	Model A	Model B	Model C	Model D	Model 1	Model 2
South (vs. non-south) [a]	—	—	—	—	—	−1.17*** (.304)
Log non-White population	—	—	—	—	—	.610*** (.074)
(A) Social Disorganization						
Percent change in total population	−.008*** (.002)	—	—	—	−.005** (.002)	−.004* (.002)
Percent change non-White population	.138 (.699)	—	—	—	.024 (.637)	.466 (.689)
Percent dilapidated housing	−.026* (.012)	—	—	—	−.047** (.018)	−.021 (.019)
(B) Absolute Deprivation						
Percent of non-White males in traditionally Black occupations [b]	—	−.014** (.005)	—	—	−.002 (.006)	−.002 (.007)
Non-White male unemployment rate	—	.033** (.011)	—	—	.019 (.017)	.003 (.019)
Non-White median family income (in 100s of dollars)	—	.019* (.008)	—	—	.032* (.014)	.004 (.017)
Non-White median education	—	−.051 (.056)	—	—	−.132 (.079)	−.119 (.085)
(C) Relative Deprivation and Socioeconomic Expectations						
Percent of males in traditionally Black occupations [c]	—	—	−.072* (.033)	—	−.024 (.049)	.050 (.056)
Income [c]	—	—	1.74** (.639)	—	−1.42 (1.21)	−.030 (1.30)
Unemployment [c]	—	—	.067 (.048)	—	−.018 (.075)	−.090 (.085)
Education [c]	—	—	1.21* (.544)	—	1.21 (.684)	−1.02 (.770)
Non-White population percentage	—	—	.281*** (.038)	—	.268*** (.048)	−.057 (.070)
(D) Political Structure						
Population (in 1,000s) per council member	—	—	—	.007*** (.001)	.006*** (.001)	−.002 (.001)
Percent of council elected at-large	—	—	—	.001 (.002)	.001 (.002)	.002 (.002)
Presence of non-partisan elections	—	—	—	.507*** (.129)	.658*** (.138)	.375* (.148)
Presence of mayor-council government	—	—	—	.693*** (.137)	.632*** (.140)	.155 (.157)
Previous riots (control)	.414*** (.027)	.413*** (.027)	.374*** (.028)	.279*** (.033)	.244*** (.033)	.180*** (.033)
Model chi-square (d.f.)	224.27 (d.f. = 4)	214.57 (d.f. = 5)	256.58 (d.f. = 6)	257.37 (d.f. = 5)	354.92 (d.f. = 17)	434.82 (d.f. = 19)

Note: Numbers in parentheses under coefficients are standard errors. The four clusters of indices are taken from Spilerman (1970a).

[a] "South" indicates Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

[b] Traditionally Black occupations are service, household, and laborers.

[c] Relative deprivation variables are calculated by dividing figure for non-Whites by figure for Whites.

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$ (two-tailed tests) between the non-White population size and the various city characteristics are themselves of considerable theoretical interest.

In the end, the comparison reported in Table 1 does little to either refute or validate the theories tested. It is the pattern of coefficients associated with the theoretical variables in Table 2 that provides evidence against the structural and deprivation theories examined by Spilerman. In each theoretical cluster, some significant coefficients are in the predicted direction, but others are not. Across the four clusters approximately one-half of the theoretical variables produce coefficients with signs opposite those which the theories would have predicted. Because none of the four theories finds reasonable support in the data, alternative explanations must be pursued.

Competition Models

To test intergroup competition perspectives, I adopted variables to indicate three central notions of competition models: economic affects of Blacks, general economic factors, and minority group migration. First, I include *non-White unemployment rates* and *raw numbers of non-Whites unemployed* as indicators of labor market competition outcomes that affect primarily Blacks. Both variables are predicted to have positive relationships with riot risk. Although non-White unemployment *rate* is often used in such analyses, I introduce the absolute number of unemployed non-Whites because it may have different effects in cities where the unemployment rate is the same. Larger numbers of unemployed non-Whites may make the unemployed segment of the group more visible and thus exacerbate feelings of competition with other groups.

The general economic factors included are the *median manufacturing worker's wage* and the *overall unemployment rate*. Higher manufacturing wages signal a growing economy, which according to competition theory would reduce competition and thereby reduce intergroup collective conflict. Unemployment indicators are predicted to have positive effects on rioting.

Minority group migration is represented by two variables, *percent foreign-born* and the *change in non-White population from 1950 to 1960*. Both variables increase the level of competition for jobs in labor market segments occupied by Blacks and thus are predicted to have positive effects on rioting.

Table 3 presents partial likelihood estimates of the effects of competition model variables on the hazard rates of racial rioting. Models A, B, and C estimate the effects for each respective variable cluster. The chi-square associated with each of these models is highly significant ($p < .001$), although the economic effects on Blacks (Model A) is clearly a more powerful model than the other two. Although nearly all significant coefficients are in the direction predicted by the intergroup competition approach, there is one notable exception: In Model B, the manufacturing wage was predicted to decrease riot risk by alleviating competition, but the data indicate that higher wages actually contributed to an increased risk of racial riots. All of the other significant indicators testing competition theory, including both economic and migration indicators, produced coefficients that support the hypotheses.

Model 1 in Table 3 combines selected variables from Models A, B, and C and offers a significant improvement over each single-cluster, as shown by the likelihood-ratio test ($p < .001$ in each case). The coefficients indicate that each variable cluster adds explanatory power above that achieved by Model A, B, or C alone. Two nonsignificant variables, the non-White unemployment rate and the change in non-White population, are dropped from the analyses at this point in the interest of parsimonious presentation. Model 2 indicates that dropping these two variables does not result in a poorer prediction of rioting rates compared to Model 1 (Model 1 vs. Model 2 in Table 3 is nonsignificant).[6] Therefore I use Model 2 as the baseline against which to examine interaction effects between economic factors and migration factors.

While most coefficients in Model 2 remain consistent with Models A, B, and C, the co-

[6] I conducted alternative analyses carrying forward the variables measuring non-White unemployment rate and the 1950–1960 change in non-White population through the remainder of the models presented in this paper. Neither variable achieved significance any model.

Table 3. Partial-Likelihood Estimates Showing the Effects of Competition Variables on Hazard Rates for Racial Riots: 410 U.S. Cities, 1961 to 1968

Independent Variable	Model A	Model B	Model C	Model 1	Model 2	Model 3
(A) Economic Effects on Blacks						
Non-White unemployment rate	−.005 (.012)	—	—	.002 (.014)	—	—
Ln of number of non-White unemployed (in 1,000s)	.497*** (.037)	—	—	.504*** (.039)	.500*** (.038)	.629*** (.059)
(B) General Economic Factors						
Median manufacturing wage (in 100s of dollars)	—	.029*** (.007)	—	.028*** (.008)	.029*** (.008)	.026*** (.008)
Unemployment rate	—	.0838** (.030)	—	−.088* (.042)	−.085* (.035)	−.090* (.035)
(C) Minority Group Migration						
Change in non-White population, 1950–1960 (in 1,000s)	—	—	−.574 (.628)	.313 (.560)	—	—
Percent foreign-born	—	—	.048*** (.010)	.029** (.011)	.030** (.011)	.026* (.011)
Ln non-White unemployed × percent foreign-born	—	—	—	—	—	−.016** (.0055)
Prior rioting (control)	.214*** (.031)	.430*** (.026)	.399*** (.027)	.188*** (.032)	.188*** (.032)	.205*** (.033)
Model chi-square (d.f.)	359.86 (d.f. = 3)	208.25 (d.f. = 3)	202.04 (d.f. = 3)	387.26 (d.f. = 7)	386.96 (d.f. =5)	395.32 (d.f. = 6)

Likelihood Ratio Tests	Chi-Square	d.f.
Model A vs. Model 1	27.40**	4
Model B vs. Model 1	179.01***	4
Model C vs. Model 1	185.22***	4
Model 1 vs. Model 2	.30	2
Model 2 vs. Model 3	8.36***	1

Note: Numbers in parentheses under coefficients are standard errors.
$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$ (two-tailed tests)

efficient for the general unemployment rate becomes negative in Model 2, indicating that lower unemployment leads to increased rioting. It is apparent that the change in sign results from adding the (ln) number of non-White unemployed to Model B. Thus, the coefficient for the general unemployment rate in Model 2 represents its independent effect when holding non-White unemployment constant, an effect that must be due largely to White unemployment. While *general* unemployment may produce the relationship predicted by competition theory, singling out White unemployment reveals a completely different effect.

I also examined a series of interaction effects suggested by competition theory. I examine interactions between economic contraction and migration because the effect of migration on rioting should differ at varying levels of economic contraction. Specifically, when the economy is faring poorly, migration into a city should have greater effects on competition and violence than when the economy is healthy. Thus, I predict a positive coefficient for interactions between the unemployment variables and the migration variables, and a negative coefficient for the interaction between manufacturing wages and the migration variables.

In general, the data do not support the theory in this respect. Of the three possible interactions, two (unemployment rate × percent foreign-born and manufacturing wage × percent foreign-born) do not achieve statistical significance (results not shown). Further, the one significant interaction term (ln number of non-Whites unemployed × percent foreign-born) is in the opposite direction of that predicted. The negative coefficient indicates that increases in the percentage of immigrants has a lower effect on rioting when non-White unemployment is high and a greater effect when Black unemployment is low. The coefficients for the model containing this significant interaction term is presented in Model 3 in Table 3. Instead of these economic and migration variables compounding each other, the effect of one appears to attenuate the effect of the other, thereby suppressing the main effects of both. In sum, however, the interaction effects I have examined contribute little to the prediction or explanation of racial rioting.

Diffusion of Rioting

Analyses of three diffusion variables are presented in Table 4. First, c_t, the spatial diffusion variable defined in equation 1, is incorporated to model the effects of spatial heterogeneity among the riots occurring in the previous week. If the diffusion hypothesis is correct, this diffusion variable should produce a positive coefficient. That is, recent rioting in cities proximal to a given city should increase that city's hazard of experiencing a riot. Second, the measure for national-level diffusion effects (M_{t-1}) simply calculates the total number of riots nationally in the previous week. Again, if national-level diffusion is occurring, a positive coefficient will be observed. In addition, the square of the national-level diffusion variable represents the tapering effect of additional riots over time. A negative coefficient is expected when this term is added after the unsquared national-level variable, meaning that a high number of recent riots would produce a diminishing hazard for rioting.

Table 4 presents results supporting diffusion predictions: All coefficients are in the predicted directions. In Model 1, the positive and significant spatial diffusion coefficient indicates that riots in the prior week increase the likelihood of riots in proximal cities and that this effect diminishes as the distance increases. In Model 2, the national-level diffusion variable also has positive and significant effects. The number of riots in the previous week increases the likelihood of rioting in any given week. Also, the number of riots in the previous week has a diminishing effect as the number of riots in the prior week increases, as evidenced by the significant and negative coefficient associated with the squared national-level diffusion term, $(M_{t-1})^2$.

The nature of this particular data set suggests an alternative to the diffusion models I offer. As is apparent in Figure 1, the vast majority of riot events during the study period occurred during 1967 and 1968. Because of the unique character of this period and the specific events that occurred then (such as the Vietnam War and the assassinations of Martin Luther King, Jr. and Robert Kennedy), it is possible that the observed diffusion effect is merely a result of the tight clustering of riot events during a relatively short time period. To test for this possibility, I introduce a dummy variable indicating whether the time period for each observation fell in the 1967–1968 time period. Given the distribution of the riot events across the study period, it is clear that the dummy variable will be highly significant. Interestingly, its effects on the diffusion variables are much less dramatic. As Model 3 in Table 4 shows, when the 1967–1968 dummy is entered, the national diffusion effect decreases slightly but remains highly significant. And there is virtually no effect on the spatial diffusion variable. Despite the unique character of the 1967–1968 period, clearly the diffusion process was operating.

What remains ambiguous to this point is the relative importance of the competition and diffusion variables when compared to the influence of non-White population size. Thus, to complete the analysis, the size of the non-White population must be introduced to evaluate its effects in conjunction with those derived from competition and diffusion argu-

Table 4. Partial-Likelihood Estimates Showing the Effects of Competition and Diffusion Variables on Hazard Rates for Racial Riots: 410 U.S. Cities, 1961 to 1968

Independent Variable	Model 1	Model 2	Model 3	Model 4
Ln of number of non-White unemployed (in 1000s)	.617*** (.059)	.625*** (.059)	.644*** (.061)	.482* (.203)
Median manufacturing wage (in 100s of dollars)	.026** (.008)	.024** (.008)	.021** (.008)	.024** (.008)
Unemployment rate	–.081* (.035)	–.101** (.036)	–.139*** (.036)	–.113* (.048)
Percent foreign-born	.020 (.011)	.023* (.011)	.035** (.011)	.034** (.011)
Ln non-White unemployed × percent foreign-born	–.013* (.006)	–.012* (.006)	–.004 (.006)	–.005 (.006)
Spatial diffusion (c_t)	.034*** (.007)	.024** (.008)	.025** (.009)	.025** (.009)
National-level diffusion (M_{t-1})	—	.295*** (.025)	.170*** (.029)	.170*** (.030)
National-level diffusion squared $(M_{t-1})^2$	—	–.005*** (.000)	–.003*** (.001)	–.003*** (.001)
Dummy indicating years 1967–1968	—	—	2.48*** (.260)	2.48*** (.260)
Ln of non-White population	—	—	—	.166 (.199)
Prior rioting (control)	.202*** (.033)	.132*** (.036)	–.0470 (.042)	–.047 (.042)
Model chi-square (d.f.)	412.49 (d.f. = 7)	525.98 (d.f. = 9)	629.86 (d.f. = 10)	630.5 (d.f. = 11)

Likelihood Ratio Tests	Chi-Square	d.f.
Model 1 vs. Model 2	113.49***	2
Model 2 vs. Model 3	103.88***	1
Model 3 vs. Model 4	.69	1

Note: Numbers in parentheses under coefficients are standard errors.
*$p < .05$ **$p < .01$ ***$p < .001$ (two-tailed tests)

ments. If demographic aggregation of national discontent is in fact operating, effects of the non-White population size should exist above and beyond any community characteristics that are not directly associated with non-White population size. In other words, if two cities have equal Black unemployment, equal manufacturing wages, equivalent regional histories, and so forth, but one city has a larger Black population than the other, this city should have a higher risk of rioting than the city with fewer Blacks.

Model 4 in Table 4 adds the natural logarithm of the non-White population to Model 3. The results for variables, other than non-White population variable itself, are consistent with the previous three models. And the addition of the logged size of the non-White population, however, has no effect on the hazard of rioting.[7] Therefore, although the variable may still have effects collinear to the competition and diffusion variables (as indicated by the attenuation of the coefficients

[7] This finding is not an artifact of the particular model. When added to any model beginning with Model 1 of Table 3, the logged size of the non-White population is not significant.

for non-White unemployment and general unemployment), the demographic aggregation argument is not supported here because no additional effect is shown.

SUMMARY AND DISCUSSION

Contrary to the conclusions drawn by Spilerman (1970a, 1971, 1976) in his classic studies, I demonstrate that local conditions did indeed contribute to the occurrence of racial rioting in the 1960s. The propensity to riot was a function of far more than simply the number of Blacks available for rioting in a particular city. I find strong support for arguments drawn from ethnic competition and conflict literature and for the existence of riot diffusion processes. Economic and migration pressures in U.S. cities created different levels of intergroup competition, which in turn contributed to the chances of experiencing racial riots. Once a riot broke out, that event increased the likelihood that other riots would break out elsewhere in the near future—particularly in cities geographically close to the original riot. These results are robust across a variety of models, including models containing very conservative control variables.

The structural strain arguments originally examined by Spilerman (1970a) again failed to find support. The arguments do not fail, however, because of the lack of significant relationships between individual variables and rioting. The variables associated with structural strain arguments actually do have important relationships with collective racial violence. Although these relationships are often obscured in multivariate analysis due to collinearity among the variables, this is not the important finding—instead, it is the lack of a coherent pattern among these variables relative to any of the tested theories that stands out. Thus I do not conclude that community characteristics have no relationships with rioting, but rather that the relationships which do exist do not form a coherent pattern to support the specific theories Spilerman tested.

Diffusion

My conclusions regarding the diffusion of racial rioting are quite straightforward, as strong evidence emerged for both national and regional diffusion processes. Although the definitions of diffusion I used here are robust, many questions remain regarding the exact nature of the diffusion process. First, given that the process appears to trail off quickly over a two-week period, a more detailed approach that examines riot data on a daily rather than on a weekly level may provide a fuller picture of this dynamic process. Models incorporating various decaying functions of time may also be useful. Second, although the measure for proximity I used here has proven effective in other studies (Hedström 1994), future work should test measures that recognize boundaries that may filter or limit diffusion processes. Third, heterogeneity within the diffusion phenomenon suggests interesting possibilities for modeling diffusion. What differences among riots can cause them to contribute more or less to the diffusion process? Size, severity, amount and type of media attention, and repressive responses are all possible riot characteristics that could affect the diffusion process. Finally, advances in understanding riot and collective action diffusion processes will also depend on learning more about the different communication processes and networks that transmit the information driving the process itself. It may be that information communicated through acquaintance networks has different effects at different rates than does information gained through the mass media. Furthermore, the dynamic interaction of all these possible factors suggests fascinating complexities and hypotheses for future models of collective violence diffusion.

Competition

The hypotheses derived from competition theory found support here, although the interactions suggested by the theory were not important. A city's median manufacturing wage does not appear at first to support competition notions. Because manufacturing wage is taken as an indicator of a healthy city economy, it was predicted to reduce intergroup competition and thus to decrease collective violence. The apparently contradictory finding can be explained easily if it is understood how economic conditions may effect Blacks and Whites differently. While high manufacturing wages may indicate that the economy is generally strong, labor market segregation causes a strong manufacturing sector to benefit Whites more than Blacks. As Olzak (1992) and Thernstrom (1973) point out, Whites (both foreign-born and native-born) dominate skilled occupations and expanding industries. Thus, when manufacturing wages are high, Whites disproportionately reap the benefits. Furthermore, Olzak's analysis supports the idea that during periods of expansion, foreign-born Whites are able to move up and out of segregated occupations, which has the effect of increasing the concentration of Blacks in low-paid and low-prestige jobs. Thus, one can see how general economic expansion, which might be expected to lower competition, could actually increase the likelihood of collective violence on the part of Blacks.

Second, while greater overall unemployment would seem to indicate greater competition for jobs, my analysis suggests that Black unemployment and White unemployment have very different effects on rioting, particularly in segregated labor markets. While White unemployment may cause more White aggression against Blacks, and Black unemployment can be expected to cause more Black aggression against Whites, it is much less reasonable to expect that White unemployment would cause Black aggression. Thus, overall unemployment must be decomposed by race to make sense of its effects on the 1960s rioting. If unemployment is viewed as an outcome of losing to competitors in the market place, then Black unemployment, not White unemployment, would be expected to increase Black collective violence.

Non-White Population Size and Unemployment

In this study, the combination of competition and diffusion provides a model that most coherently accounts for differences in riot risks among U.S. cities in the 1960s. This model is superior to models using structural-strain variables and to a model dependent only on non-White population size. The competition/diffusion model is superior to the non-White population size argument because it illuminates theoretical explanations for rioting. The notion of demographic aggregation or opportunity (via non-White population size) as the sole source of rioting variability is not supported because increases in population size do not increase riot propensity beyond that of other explanatory variables. Clearly, the argument that 1960s rioting was an essentially random process once the demographic aggregation of potential rioters was controlled is not adequate.

A detailed stepwise examination of Model 4 in Table 4 reveals that one of the main variables superseding the size of the non-White population variable is the number of non-Whites unemployed in a given city. In this analysis, regardless of the percent unemployed, it is the *number* unemployed that has the most powerful effect on riot rates. Three tempting interpretations come to mind. The first is that the non-White unemployment rate is simply a proxy for the non-White population size. While this interpretation is partially true and clearly plausible in the case of cities with similar unemployment rates but different numbers of Blacks (those with higher populations will experience higher rates of rioting), the interpretation breaks down when Black unemployment rates vary. Under such circumstances, cities with larger Black populations and lower unemployment rates could have lower raw numbers of unemployed Blacks than some cities with smaller Black populations and higher Black unemployment rates. Given the results presented here, the cities with larger Black populations would experience less rioting than cities with smaller Black populations, a result which is exactly the opposite of what would be predicted from the proxy argument.

The position I take, however, is not that the size of the Black population is unimportant to riot rates. In fact, the models presented in Table 4 demonstrate that the number of non-Whites unemployed and the size of the non-White population are collinear with regard to their ability to predict rioting. Nevertheless, the parameter estimate for the number of unemployed non-Whites is significant, indicating that there are important differences in riot rates that cannot be explained simply by the overlap between these two variables.

A second interpretation of the relationship between the numbers of non-White unemployed and riot rates is that rioting requires biographical availability, and the unemployed, given the lack of demands on their time, are the most available segment of the population. While biographical availability has proven to be an extremely useful variable in social movement and collective behavior research (particularly with regard to student protest movements), it is less useful in this context. Many studies conducted on riot participants have found no significant differences in employment status between rioters and non-rioters. For example, Opp (1989) found that unemployment had no relationship to illegal protest and a negative relationship to legal protest. Similar relationships have been found in a number of surveys of participants and nonparticipants of the 1960s riots (Rodgers and Bullock 1974; Caplan 1970; Mason and Murtagh 1985). Furthermore, many studies have established that urban riots occur "at times when (e.g., after working hours or on weekends) people are available" (McPhail 1994:9; also see McPhail and Miller 1973; Burbeck, Raine, and Stark 1978). Because the unemployed are not constrained by working hours, their availability for rioting is continual. Therefore, if the unemployed were largely responsible for rioting, this temporal pattern of rioting would not exist.

A third explanation of the importance of non-White unemployment to rioting reasons that the unemployed are the most discontent and therefore would be the more likely than the employed to lash out in violence. Again evidence that the unemployed no more constitute the body of rioters than they do the general population contradicts this explanation. Furthermore, few studies have established any attitudinal differences between those who participate in riots and those who do not (Rodgers and Bullock 1974).

In short, the reason that the number of unemployed is so important to riot rates is not presently clear. It may be that even though the unemployed are not overrepresented among riot participants, they may be overrepresented among those who *initiate* rioting. If this were true, biographical availability, severe discontent, or both could be operating. On the other hand, it may be that higher numbers of unemployed Blacks make Blacks' economic problems highly visible and thus highly salient. Such a condition would increase the likelihood of riots independent of biographical availability or participation by the unemployed specifically. At present, available empirical data are not adequate to assess these two possibilities. This study, however, strongly suggests that the role of unemployment is one key to understanding riot outbreaks, and that further research should focus on determining exactly how unemployment contributes to civil unrest.

Daniel Myers *is a Ph.D. candidate in Sociology at the University of Wisconsin–Madison. His research interests include collective violence, formal models of collective action, game theory, and media coverage of protest activity. His dissertation research focuses on developing and testing models of the diffusion of collective violence.*

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