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ABSTRACT

A range of hypotheses of varying specificity is examined in this paper in an attempt to account for the location of racial disorders. The initial sections consider what general assumptions must be met by any satisfactory explanation of the distribution of disorders. Mathematical models are constructed which embody the most prevalent assumptions as to the determinants of community riot-proneness, and their predictions are compared with empirical data. The specific assumptions considered are: (a) all cities have an identical probability of experiencing a disorder; (b) communities are heterogeneous in their underlying riot-proneness; (c) a process of reinforcement characterizes the occurrence of disorders; (d) contagion among communities contributes to the distribution of racial disturbances. Only the heterogeneity assumption is supported by the data. The concluding sections consider the explanatory abilities of several additional theories, each of which argues the importance of particular community characteristics. All are rejected in favor of an explanation which locates disorders in the essential conditions of Negro life in America.

The Causes of Racial Disturbances: A Comparison of Alternative Explanations

1. Introduction

Since 1960 there have been several hundred incidents of substantial racial violence in American cities. The impact of these disturbances on the American conscience has been considerable: Federal and state commissions were formed to investigate the disorders; individuals have entered into a debate over whether American institutions are "racist" in character; and, at least partially in response to race riots, governmental programs have been initiated to ameliorate the situation of the Negro in urban centers.

Accompanying this concern with remedying past injustices, considerable interest has focused on the causes of the disorders. Why, for example, have they occurred in some cities but not in others? It has been suggested that the disturbances were planned and represent conspiracies, that they were basically random occurrences in which all cities shared an identical probability of experiencing a disorder, or alternatively, that communities with particular structural characteristics are more prone to racial violence than other cities. However, despite the presence of competing explanations, remarkably little empirical research has actually been carried out to assess their relative merits.

In this paper we examine a number of explanations of the causes of racial disorders, then use empirical data to compare their abilities to account for the outbreaks of the 1960's. We will follow the conceptualization of collective behavior which has been employed by other investigators and distinguish between the underlying causes and the immediate precipitants of racial disturbances.[1] Underlying causes take as their referents the relatively stable structural and demographic characteristics of a community which are presumed, either from theory or empirical investigation, to relate to "riot-proneness." Precipitating factors, by contrast, are random occurrences, events of the kind which

transpire daily in most communities and usually are disposed of routinely. The particular events which precipitated the racial disorders of the 1960's, for example, commonly involved some inter-racial incident[2] (often between a white policeman and a Negro offender), yet such encounters are frequent in American cities. In order for an incident of this character to escalate to a level at which it is recognized as a racial disturbance or a race riot it appears necessary for bystanders to the conflict to interpret it in primarily racial terms, and respond on this basis.

Most students of collective behavior have argued that the use of a racial perspective by individuals for organizing their perceptions is more likely in communities which have certain institutional structures. Thus, Neil Smelser (1963) writes of structural conduciveness and structural strain to denote the non-neutrality of institutional arrangements for the likelihood of collective behavior. More concretely, Lieberson and Silverman (1965), in a comparison of 76 cities which experienced race riots between 1913 and 1963 with matched non-riot cities, conclude that riot cities are more likely to have unresponsive municipal political structures (as indicated by at-large election of councilmen, and large council districts) and a high level of economic competition between the races (measured by similarity of occupation, income, and unemployment rates between Negro and white males). Thus, by distinguishing between precipitants and underlying conditions, and presuming the former to be random events, one is led to seek explanations for the distribution of racial disorders among cities in the demographic and structural differences between them.

Using this conceptualization, a number of studies (Maloney, no date; White, 1968; Downes, 1968) have attempted to ascertain some of the structural characteristics of a community which correlate with outbreaks of racial violence in the 1960's.[3] These investigations have commonly pursued dual, though related, objectives: to determine a causal relationship between the organization of community

activity and racial unrest, and to devise a method for ranking cities in terms of their "riot-proneness" or potential for incurring racial disorders. However, several criticisms can be leveled at the methodology of these studies. For one, they have generally resorted to a dichotomous classification of cities, contrasting riot with non-riot communities. As a consequence, the considerable information that some cities have experienced numerous disorders has been disregarded. Yet, if cities are heterogeneous in riot-proneness, it seems more reasonable to expect them to vary along this dimension in a continuous manner than be limited to a binary value. Second, although a research strategy which compares paired riot and non-riot cities may be feasible for time periods during which disorders were rare and extraordinary occurrences, the racial disturbances of the 1960's are too numerous to permit effective use of this method of analysis. There simply are insufficient non-riot cities to allow matching on region and population size as Lieberson and Silverman had done. Clearly, a multivariate technique is required. Third, and probably the most serious criticism, it has not yet been demonstrated that the cities which experienced racial disturbances in the 1960's are, either structurally or demographically, any different from communities which were more fortunate and escaped racial violence. Although several cities have witnessed more than one disturbance, because of the random nature of precipitating incidents it is entirely possible that even these communities are no different from non-riot cities in any manner which relates to riot-proneness.[4] An example will illustrate the significance of this point.

If racial disorders were random occurrences with all cities having an identical probability of experiencing a disturbance at each point in time, the inter-city distribution of disturbances could be estimated by the Poisson distribution--

$$P_k(t) = \frac{(\lambda t)^k e^{-\lambda t}}{k!} \qquad (1)$$

where k = number of disorders, λ = the rate of outbreaks, and t = the time interval. More precisely, the Poisson process[5] requires the following substantive assumptions:

(i) λ, the riot-proneness value, is identical for all cities.

(ii) λ, is constant over time.

(iii) Racial disorders are independent events, in time and place. This means the probability of racial violence in a community does not depend upon whether previous outbreaks have occurred in the city or in neighboring communities.[6]

Table 1 presents a hypothetical distribution of disorders which conforms to the Poisson assumptions. The moral of this example is that although 55 percent of the cities would not have experienced a disturbance and 45 percent would have incurred one or more outbreaks of violence, all cities, by assumption, have an identical riot-proneness value. In this circumstance, the procedure of pairing riot with non-riot cities to ascertain structural differences between them would result in significance being attributed to community characteristics which, in reality, results from sampling error.

Table 1 about here

There are other explanations of the causes of disorders which would result in attributing causal import to structural differences between communities which reflect only sampling error. If the Poisson assumptions were modified so that after each outbreak of racial violence in a city its riot-proneness score is altered, increased or decreased to reflect positive or negative reinforcement, then once disorders have occurred the cities would, in actuality, differ in riot-pronenes

TABLE 1. HYPOTHETICAL DISTRIBUTION OF RACIAL DISORDERS UNDER ASSUMPTION THAT ALL CITIES HAVE IDENTICAL RIOT-PRONENESS VALUES

(k) Number of Disorders	(n_k) Proportion of Cities with k Disorders (Calculated from Poisson Distributed, $\lambda = .60$)
0	55
1	33
2	10
3	2
4	0
5	0
6	0
$\sum_k n_k k$	100

However, this type of heterogeneity would not reflect underlying structural differences between the cities since the probability of an initial disorder would still be identical for all; it would be indicative only of the residual effect of previous disturbances in a community, polarizing racial attitudes or perhaps increasing communication and understanding.

For these reasons it is imperative to first inquire whether the distribution of racial disorders among cities can be explained without recourse to an assumption of heterogeneity in community riot-proneness which stems from the variation in community organization. The Poisson process is an attractive model for an additional reason as well. If it were applicable to racial disorders then the parameter value λ in the Poisson distribution (equation 1) would be a precise measure of the riot-proneness value common to the cities. In fact, λ even has the dimensions of a rate, events/time.

The following pages of this paper can be divided, conceptually, into two parts. Sections 2-5 consider what general assumptions must be met by any satisfactory explanation of the distribution of racial disorders. Building upon the conclusions from this analysis, Sections 6 and 7 examine the utility of a number of proposed explanations.

2. Alternative Models of the Causes of Disorders

Viewing outbreaks of racial violence as random events in time and place, one can inquire into the assumptions which must be made in order to account for the distribution of disorders. Were the disturbances of the 1960's equally apt to occur in all communities? Did an outbreak of racial violence alter the likelihood of a subsequent disorder in the same city? Was "geographic contagion" a significant factor, with sympathetic disturbances occurring in communities neighboring an impact area? We propose to investigate these questions by

comparing the actual distribution of racial disorders among the cities with predictions made from models incorporating different assumptions as to the determinants of riot-proneness. This is not a foolproof procedure; indeed, it will be shown that very different assumptions can result in the same distribution. However, even in this circumstance it is usually possible to select among the alternative models since some of their implications will necessarily be divergent.

To investigate the distribution of racial disorders, information was collected on all instances of substantial racial violence during the period 1961-68. The main sources of information on racial disturbances were the Lemberg Center's Riot Data Review (1968), the Congressional Quarterly's Civil Disorder Chronology (1967), the Kerner Commission's compilation (U.S. Commission on Civil Disorders, 1968:323-4), and the New York Times Index. Because of the large number of disturbances it was possible to reduce heterogeneity in the type of racial disorder without severely limiting the number of cases.[7] Consequently, only instances of Negro aggression were included in the analysis. This was the most common type of racial disturbance during the 1960's, and the most destructive race riots had this character. The targets of violence in these disturbances were either symbols of white authority and dominance in the ghettos or white bystanders who chanced to be in the impact area. Where it could be documented, disorders which had their origin in civil rights demonstrations, in school activities, or in other settings which might provide a focus for contending groups, were also excluded. These incidents were deleted since our method of explanation requires that the outbreaks of violence be conceptualized as random occurrences. Moreover, our intent is to ascertain the extent to which racial disorders reflect underlying structural conditions in cities. Communities which were targeted for demonstrations by civil rights groups may have been selected for a variety

of strategic and organizational reasons which are unrelated to our concerns. Similarly, disorders originating in schools may reflect tensions peculiar to that institution.

With these restrictions on the inclusion of racial disorders, 341 incidents were documented for the period 1961-1968 among the 673 cities in the continental United States with populations greater than 25,000 in 1960. For our purpose, all instances of racial violence involving 30 or more individuals were classified as racial disorders. The severity of a disturbance was presumed to be principally a function of the response made by the police and allied agencies of social control to the precipitating incident, rather than an indicator of the underlying level of frustration in the community.[8]

T. M. Tomlinson has suggested that a "riot ideology" has become fashionable in black communities, that a significant minority of Negroes view riots as a legitimate and productive mode of protest. "What produces riots is the shared agreement by most Negro Americans that their lot in life is unacceptable... What is unacceptable about Negro life does not vary much from city to city, and the differences in Negro life from city to city are irrelevant" (1968:29). One interpretation of Tomlinson's thesis is that racial violence is as likely to occur in one city as in another. If we accept the Poisson assumptions as a formalization of this statement (identical riot-proneness values for all cities, disorders escalating from incidents which are random events, no after effects from a disorder on the city's subsequent riot-proneness value), then a test of Tomlinson's thesis can be constructed from the distribution of disorders.

Table 2 about here

Table 2 presents the distribution of racial disturbances for the eight year interval together with the distribution predicted from the Poisson model.

TABLE 2. DISTRIBUTION OF RACIAL DISORDERS FOR THE PERIOD 1961-68, TOGETHER WITH PREDICTED VALUES FROM POISSON DISTRIBUTION*

(k) Number of Disorders	(n_k) Number of Cities with k Disorders (actual)	($\hat{n}_k$) Number of Cities with k Disorders (Calculated from Poisson, $\lambda = .507$)
0	504	405
1	93	206
2	36	52
3	19	9
4	10	1
5	4	0
6	2	0
7	1	0
8	0	0
9	1	0
10	2	0
11	1	0
Σn_k	673	673
$\bar{k}$	.507	
s_k^2	1.515	

*Includes only instances of black aggression, spontaneous origin.

It is evident that the fit is a poor one. The Poisson assumptions do not adequately describe the process according to which the outbreaks of racial violence have occurred. The following represent possible reasons for the discrepancy:

(1) The Poisson process assumes that λ, the riot-proneness value common to all cities, is constant through time; however, the data make it clear that this assumption is untenable. According to Table 3, the rate at which racial disorders have occurred increased during the period 1961-1968.

(2) The Poisson process requires all communities to have an identical riot-proneness value. In the view of many investigators, this assumption represents a gross simplification of reality since it excludes the possibility that structural characteristics of cities are related to the occurrence of racial violence.

(3) The Poisson assumption regarding the absence of reinforcement may be incorrect. Instead, a disorder may alter the probability of a repetition of violence in the same city.

(4) The Poisson model requires an absence of "geographic contagion" between cities (no greater likelihood of sympathetic disorders in communities neighboring an impact area). However, according to the Kerner Commission (National Advisory Commission on Civil Disorders, 1968:66) the disorders tended to cluster in time and location.

Table 3 about here

Each of these possible reasons for the discrepancy between the predicted and actual values refers to one of the assumptions underlying the Poisson process. In the next sections, we relax the Poisson assumptions one at a time--thereby creating alternative explanatory models--and note the ability of the resulting process to account for the distribution of disorders.

TABLE 3. DISTRIBUTION OF RACIAL DISORDERS FOR THE PERIOD 1961-68*

(k) Number of Disorders	(n_k) Number of Cities with k Disorders				
	Year				
	1961-4	1965	1966	1967	1968
0	658	665	645	566	569
1	10	8	23	85	78
2	3		4	18	19
3	2		0	3	5
4			0	1	1
5			1		1
Σn_k k	673	673	673	673	673
$\bar{k}$	.033	.012	.053	.199	.208
s_k^2	.058	.012	.092	.258	.314

*Includes only instances of black aggression, spontaneous origin.

3. The Time Dependent Poisson Process

The first of the departures from the simple Poisson process[9] would not prevent the inter-city distribution of racial disorders, aggregated over the eight year interval, from conforming to the Poisson distribution. If the remaining assumptions were met, the time dependent rate $\lambda(t)$--still assumed to be identical for all cities at each point in time--could be averaged over the duration 0-t to find a constant Λ,

$$\Lambda = \int_0^t \lambda(u)\,du$$

which serves an analogous role to the λt term in the simple Poisson process.[10] Consequently, when aggregated over the time interval, the disorders would satisfy a Poisson distribution with parameter Λ--

$$P_k = \frac{\Lambda^k e^{-\Lambda}}{k!}$$

This is a particularly important result since the rate of occurrence of racial disturbances has changed dramatically during the time period under consideration. Disorders increased in number through April 1968, reaching in the month following the assassination of Martin Luther King what has been described in the press as "epidemic proportions" (see Table 3). These changes in $\lambda(t)$ could be interpreted as evidence for Tomlinson's thesis that it is not local deprivations to which Negroes were responding. Certainly, the structural and demographic characteristics of the individual cities are too stable to account for this volatility in the rate of disturbances.[11] However, because we have now shown that over-time change, alone, in a common community propensity toward racial violence would not alter the aggregate distribution of disorders, the poor fit reported in Table 2 cannot be attributed to the volatility of $\lambda(t)$. One or more of the remaining Poisson assumptions, each of which excludes some form of community heterogeneity in

riot-proneness, must be incorrect. Consequently, if Tomlinson is suggesting that all cities have an identical likelihood of experiencing a racial disorder, he is wrong. In section 6 we will consider an alternative formulation of Tomlinson's contention.

4. Heterogeneity or Reinforcement?

Departures from the other Poisson assumptions have more serious consequences since the expected distribution of events usually will be altered. Perhaps the most important modification involves relaxing the requirement that all communities must share an identical riot-proneness value. Elimination of this assumption is suggested by the conclusions of other investigators (Lieberson and Silverman, 1965; Downes, 1968; White, 1968), and by the following statistical verity: If racial disorders are actually random events in time, but with communities differing from one another in riot-proneness, then the variance of the number of outbreaks in a city should exceed the expected number of occurrences.[12] This fact derives from the general decomposition formula for a variance in terms of the conditional variance (see Parzen, 1962:55)--

$$\begin{aligned} \text{var}(k) &= E_{\lambda}[\text{var}(k|\lambda)] + \text{var}_{\lambda}[E(k|\lambda)] \qquad (2) \\ &= E(\lambda) + \sigma_{\lambda}^{2} \qquad \text{(for a Poisson process)} \end{aligned}$$

The first term on the right side of equation (2) is the expectation of the conditional variance. Since the variance of a Poisson process, conditional upon $\lambda = \lambda'$, equals λ', this term reduces to the expectation of λ and is estimated by $\bar{k}$. The second term is the variance of the conditional expectation. Again, the expectation of a Poisson variable, conditional upon $\lambda = \lambda'$, equals λ'; consequently, this term reduces to the variance of λ.

If communities are heterogeneous in their propensities to incur racial violence then $\sigma_{\lambda}^{2} > 0$ and, from Equation (2), var(k)>E(λ). From Table (2)

$S_k^2 = \hat{var}(k) = 1.515$ and $\bar{k} = \hat{E}(\lambda) = .507$, values which are consistent with the thesis that the cities are heterogeneous in their disorder propensities. In fact, under the assumption that racial disturbances are random events with a unique λ-value characterizing each city, we can proceed to estimate the mean and variance of $f(\lambda)$, the distribution of λ-values among the cities: $\hat{E}(\lambda) = .507$ and, applying Equation (2), $\hat{\sigma}_\lambda^2 = 1.008$.[13]

With the relaxation of the assumption that the riot-proneness values for different cities are identical, the expected distribution of disorders need no longer be Poisson. This complicates the mathematics; however, under some additional, though not very restrictive, assumptions the model will still be mathematically tractable.

If we assume that the riot-proneness values are distributed according to some density function, $f(\lambda)$, then at an arbitrary point in time the distribution of these community propensities represents a sample drawn from $f(\lambda)$. Furthermore, if each city obeys a simple Poisson process, albeit in accordance with its individual λ-value, then the aggregate distribution of disorders may be written as a <u>compound</u> Poisson--

$$P_k = \int_0^\infty P(k|\lambda) f(\lambda) d\lambda = \int_0^\infty \frac{\lambda^k e^{-\lambda}}{k!} f(\lambda) d\lambda$$

This expression says that the proportion of cities which experienced k riots is equal to the sum of the products of two quantities: (a) The proportion of cities having a propensity equal to λ, and (b) the probability that a city with value λ will have k riots during the time period. The summation is taken over all possible values of λ.

We have still to specify the form of $f(\lambda)$. We will assume that the city propensities are distributed in accordance with a gamma distribution,

$$f(\lambda) = \frac{\beta^\alpha}{\Gamma(\alpha)} \lambda^{\alpha-1} e^{-\beta\lambda} \quad ; \lambda>0, \quad \alpha>0, \quad \beta>0$$

where $\Gamma(\alpha) = \int_0^\infty y^{\alpha-1} e^{-y}\, dy$. This is not a very restrictive density function. The family of gamma distributions includes as special cases many common unimodal distributions such as the negative exponential, the Poisson, and the chi-square distribution.[14]

With this assumption regarding the form of $f(\lambda)$, the proportion of communities experiencing k riots in a specified time interval is given by--

$$P_k = \int_0^\infty P(k|\lambda) f(\lambda)\, d\lambda$$

$$= \int_0^\infty \frac{\lambda^k e^{-\lambda}}{k!} \frac{\beta^\alpha}{\Gamma(\alpha)} \lambda^{\alpha-1} e^{-\beta\lambda} d\lambda$$

$$= \frac{\beta^\alpha}{\Gamma(\alpha)\ k!} \int_0^\infty \lambda^{k+\alpha-1} e^{-\lambda(\beta+1)} d\lambda$$

$$= \frac{\Gamma(k+\alpha)}{k!\ \Gamma(\alpha)} \beta^\alpha (\beta+1)^{-(k+\alpha)} \qquad (3)$$

Using the recursive property of the gamma function, $\Gamma(\alpha) = (\alpha-1)\Gamma(\alpha-1)$, equation (3) may be rewritten in the form,

$$P_k = \binom{\alpha + k - 1}{k} \left(\frac{1}{\beta + 1}\right)^k \left(\frac{\beta}{\beta + 1}\right)^\alpha \qquad (4)$$

which is a negative binominal distribution[15] with parameters α and $p = \frac{\beta}{\beta + 1}$.

Therefore, if racial disturbances are random events in time, and if communities are heterogeneous in riot-proneness (but distributed in accordance with a gamma density function), we would expect the disorders to follow a negative binominal distribution. The mean and variance for the negative binominal can be found by the method of moments (Chiang, 1968:50) --

$$E(k) = \frac{\alpha}{\beta} \qquad (5)$$

$$Var(k) = \frac{\alpha}{\beta}\left(1 + \frac{1}{\beta}\right) \qquad (6)$$

Since $\bar{k}$ and s_k^2 can be calculated from the empirical data in Table 2, by substituting these estimates for E(k) and var(k) into Equations 5 and 6 and solving for α and β we can estimate the latter qualities --

$$\hat{\beta} = \frac{\bar{k}}{s_k^2 - \bar{k}} = .502 \qquad (7)$$

$$\hat{\alpha} = \hat{\beta}\,\bar{k} = .255 \qquad (8)$$

With these parameters, Equation (4) can be used to generate the expected distribution of disorders. These values are presented in Table 4 alongside the empirical distribution. The estimates are clearly more satisfactory than those produced by the simple Poisson. As judged by the χ^2 - criterion, chance fluctuations alone would produce larger deviations of observed frequencies from the theoretical estimates 85 per cent of the time.

Table 4 about here

We have done much more here than merely describe the distribution of racial disturbances by fitting a probability distribution. We have assumed a specific generative process to be operative: Racial disorders are conceptualized as random events in time, there is no after effect from a disorder on a community's subsequent riot-proneness, no geographic contagion between communities, and the cities are heterogeneous in their propensities to incur racial violence. Moreover, the community propensities satisfy a gamma distribution.[16]

Using the estimates of α and β, the particular gamma function which characterizes the distribution of the riot-proneness values can be graphed (see Figure 1). It is worthwhile to note that the clustering of communities at the low end of the λ-scale is consistent with the form which is suggested by the distribution of the disturbances themselves (Table 4): Many communities have low propensities toward racial violence, progressively fewer are found as the value of λ is increased.

Figure 1 about here

TABLE 4. DISTRIBUTION OF RACIAL DISORDERS FOR THE PERIOD 1961-68, TOGETHER WITH PREDICTED VALUES FROM NEGATIVE BINOMIAL DISTRIBUTION*

(k) Number of Disorders	(n_k) Number of Cities with k Disorders (actual)	$(\hat{n}_k)$ Number of Cities with k Disorders (Calculated from Negative Binominal, $\alpha = .255$, $\beta = .502$)
0	504	509
1	93	87
2	36	36
3	19	18
4	10	10
5	4	6
6	2	3
7	1	2
8	0	1
9	1	1
10	2	0
11	1	0
—	—	—
Σn_k	673	673
$\bar{k}$	.507	$\chi^2 = 1.78$**
S_k^2	1.515	d.f. = 5

*Includes only instances of black aggression, spontaneous origin.

**Values in cells 7-11 were combined.

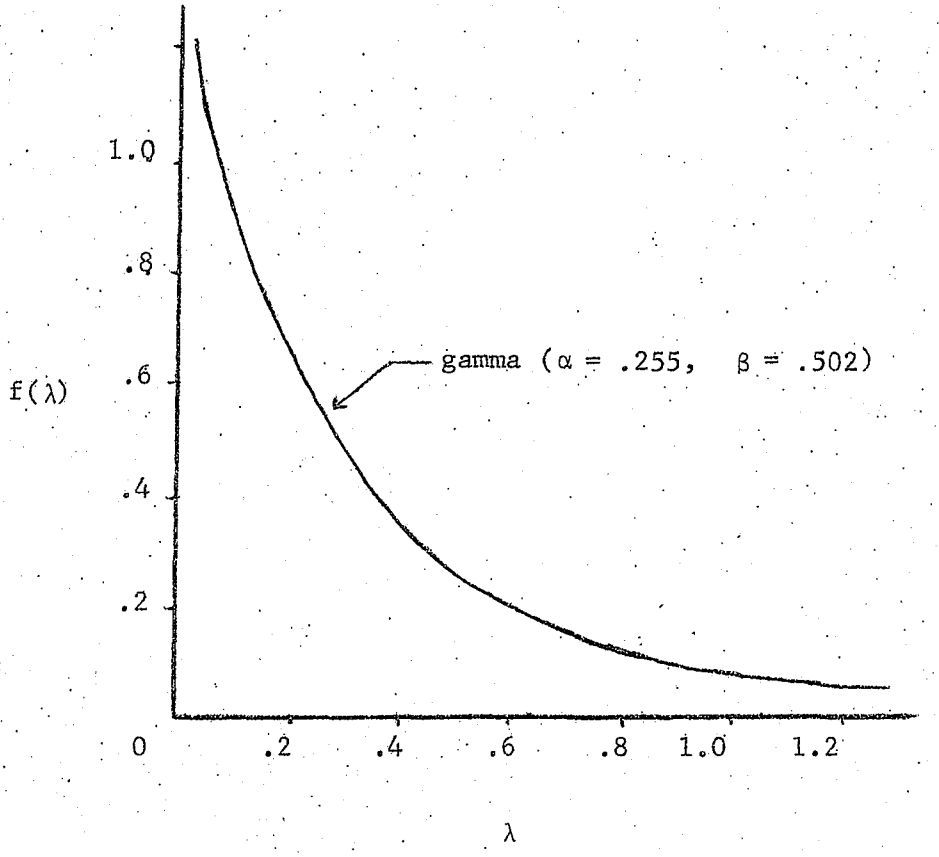

FIGURE 1. DISTRIBUTION OF RIOT-PRONENESS VALUES

The assumption of heterogeneity is necessary if one intends to explain riot-proneness in terms of community characteristics. However, the mere fact that the disorders can be adequately described by a negative binominal distribution which has been deduced from a heterogeneity specification does not prove the validity of this assumption. In fact, James S. Coleman (1964) has derived the negative binominal distribution from very different assumptions, ones which are also plausible in the present context as an alternative to heterogeneity. Rephrased in terms of racial disturbances, Coleman shows that if communities were initially to share an identical riot-proneness value, but experience an increase in this parameter after a disorder, a negative binominal distribution would result. In more precise terms, the reinforcement thesis is described by the following scenario: At the beginning of the 1960's, before the rash of racial disorders which has characterized this decade, all communities shared an identical riot-proneness value δ. With each outbreak of violence in a city, however, its riot-proneness value was increased by the amount μ [so that prior to a first disorder a city would have the value δ, prior to a second disturbance the parameter would be $(\delta + \mu)$, and prior to an n^{th} disturbance, the value for the community would be $(\delta + [n-1]\mu)$]. Estimates of the parameters for the reinforcement model, using the data in Table 2, yield the values $\delta = .26$ and $\mu = 1.10$.[17]

The reinforcement explanation of the inter-city distribution of racial disorders has actually been invoked in two different ways. First, it has been suggested that an outbreak of violence increases the likelihood of a subsequent disorder. There is evidence, for instance, that the races become more polarized following a major disturbance. In Newark, after the July 1967 riot, protective associations were formed, and sales of hand guns and other lethal weapons increased. Often, there is a residue of bitterness in the Negro community against callous police actions during the disorder. Moreover, it has

been suggested (Sears and Tomlinson, 1968:496) that the attention which is suddenly given to ghetto problems following a racial disturbance may even reinforce this form of behavior as a stratagem for calling attention to the deprivations of Negro life. For all these reasons it is conceivable that cities become more riot-prone after a major racial disturbance.

Alternatively, a plausible case can be made for a negative reinforcement thesis. In this view, after an outbreak of violence a subsequent disorder is less likely because the community is temporarily "innoculated." This could occur for any of the following reasons:

(1) The calamity serves to focus community attention on the root causes of rioting -- living conditions in the ghetto, inadequate schools, poor employment opportunities, etc. -- producing a flurry of activity and at least the appearance of remedial action.

(2) More effective crowd control techniques are introduced into the police repertoire of disorder prevention tactics. Community relations programs are undertaken to improve the image of the police among ghetto residents.

(3) The Negro population is confronted with evidence that the major costs of rioting, in terms of property damage and loss of life, are borne by the ghetto residents themselves.

(4) Rioting provides a release for the tensions which have accumulated from years of indifference and neglect by the white community. After this release a recurrence of violences is unlikely until the tension rebuilds. Point (1) is also relevant here: The sudden interest evidenced by community elites in the problems of ghetto residents may slow the rebuilding process.

Consequently, as an alternative explanation for the distribution of disorders, one can reasonably posit that there is both an exogenous commponent (δ) to the riot-proneness value of a city, identical for all communities and deriving, presumably, from the national milieu (what Tomlinson calls a "riot-

ideology"), and a community-specific component ($n\mu$) which reflects the after-effects from earlier upheavals. It is necessary to emphasize that while this argument also employs a version of heterogeneity, it is a very different one from the explanation presented earlier in connection with this term. After the occurrence of disorders, the cities will differ in riot-proneness -- some will have the value δ, others $\delta + n\mu$ where n equals the number of previous disorders in the city. However, because the location of an initial disorder is still assumed to follow a simple Poisson process in which all communities have an equal likelihood of witnessing a disturbance, this form of heterogeneity would not be related to a community's economic or political structure or to its racial composition. It would reflect only the residue from earlier upheavals on the attitudes and behavior of city residents and municipal elites -- changes, presumably, in the pattern of communication between Negroes and whites, and in the attention given to the problems associated with ghetto life.

Turning to a comparison of these alternative explanations, one reading of the evidence, which would support negative reinforcement, suggests that racial disorders are unlikely to recur in cities which have already experienced a major disturbance. Neither Los Angeles, Detroit, nor Newark has witnessed a repetition of large scale rioting. However, considering the random character to the occurrence of disorders, inferences from a population of three during a brief time interval are meaningless. In fact, the data covering all cases of racial disturbances unequivocally refute the hypothesis of negative reinforcement. For example, the 15 cities reported to have experienced disorders during the period 1961 - 64 include all 4 cities with greatest numbers of disturbances during the years 1965 - 68, and 6 of the 11 most disorder-prone cities during this period. Eleven of these 15 cities experienced 2 or more disturbances during 1965 - 68, although the rate for all cities was 74/673 = .110. Consequently, the data are not consistent with a negative reinforcement process.[18]

In order to choose between heterogeneity and the positive reinforcement explanation, both of which predict a negative binominal distribution, it is necessary to examine the over-time change in the distribution of disorders. If the heterogeneity thesis is correct, we should find that the distribution of racial disturbances is substantially the same in successive years. That is, if the occurrence of a disorder has no effect on the likelihood of a subsequent upheaval, there is little reason to expect the distribution to change over time. By contrast, if each disorder were to increase the likelihood of future violence we should find that the variance of the number of disorders increases in successive years. In effect, the heterogeneity in the riot-proneness values would be increasing.

Information regarding the over-time distribution of disorders is presented in Table 3. According to the row labeled S_k^2, the variance of the distribution does, in fact, increase over successive years. For the period 1965 - 68, the values of S_k^2 were .012, .092, .258, and .314. The change in S_k^2 therefore supports the positive reinforcement hypothesis.

Nevertheless, the evidence for reinforcement is suspect. The significance which was attributed to the over-time increase in the variance presumes that the exogenous effect term δ, in the riot-proneness parameter $\delta + n\mu$, remains constant over time. If, instead, the process were actually one of heterogeneity, but with each city's unique riot-proneness value increasing over time in response to a uniform national stimulus, we would also find the aforenoted increase in the variance. In fact, a rereading of the data in Table 3 suggests that the change in the variance is due to an exogenous effect, and not to positive reinforcement. I refer to the rate of decline in cities which have not yet experienced a disorder. In 1965, eight cities had an outbreak of racial

violence. According to the reinforcement hypothesis only these communities should be more disorder prone. However, in 1966, 28 cities experienced one or more racial disorders. Even if every one of the sites of an earlier disturbance experienced a repetition of violence, there was still a substantial increase in the rate of new disorder cities. Similarly, in 1967, 107 cities witnessed racial upheavals. Again, even if each of the 36 cities which previously reported a racial disturbance experienced a recurrence, there were still 71 new disorder cities in 1967. The inference to be drawn is that cities with no prior history of disorders were experiencing an increase in riot-proneness during the years 1965 - 67. This finding is clearly inconsistent with the reinforcement thesis.

There is an additional reason for preferring the heterogeneity explanation. On a priori grounds we should expect the numerical size of the Negro population to be a factor in riot-proneness. A number of communities have fewer than 100 Negro residents. Considering the probable sex and age distribution of these few individuals, the resources for collective action would seem to be lacking. By contrast, many of our largest cities have several geographically distinct black ghettos, each of which alone could sustain a disorder. For these reasons, although the negative binomial fails to distinguish between the alternative explanations, heterogeneity and positive reinforcement, the weight of evidence is in support of the former.

5. Geographic Contagion

According to the Kerner Commission there is considerable evidence that geographic contagion contributed to the spread of disorders during the summer of 1967. "Ninty-eight disorders can be grouped into 23 clusters, which consist of two or more disturbances occurring within 2 weeks, and within a few hundred miles of each other" (National Advisory Commission on Civil Disorders,

1968:66). Elsewhere in the report (1968:38) the Commission details the mechanics of geographic contagion: "reports of looting, sniping, fire and death in Newark wove a web of tension over other Negro enclaves in northern New Jersey. Wherever Negro ghettos existed -- Elizabeth, Englewood, Jersey City, Plainfield, New Brunswick -- people had friends living in Newark. Everywhere the telephone provided a direct link to the scenes of violence."

The assumptions of geographic contagion are not unlike those of reference group explanations. In reference group theory, the actions of an individual are explained in terms of the expectations and norms prevalent in the primary groups and secondary associations which are important to him. In the geographic contagion thesis, Negroes who reside on the periphery of major black ghettos are presumed to be more sensitive and responsive to upheavals in the neighboring metropolis than to racial disturbances in more distant cities. Since the heterogeneity model described in the previous section does not make allowance for the effects of geographic contagion, it is important to estimate the magnitude of the distortion resulting from this simplification. To do so, we examine the post-Newark disturbances (which include the major Detroit riot), since the rash of disorders during those few summer weeks in 1967 provide the most compelling evidence for geographic contagion. In the words of the Commission (1968:66), "'Clustering' was particularly striking for two sets of cities. The first, centered on Newark, consisted of disorders in 14 New Jersey cities. The second, centered on Detroit, consisted of disturbances in seven cities in Michigan and one in Ohio."

To estimate the effect of geographic contagion on the distribution of disorders we first pose an alternative thesis. We suggest that the two major disorders, in Newark and Detroit, actually elicited sympathetic responses from Negroes in all sections of the country, that communities proximate to these

cities were no more prone to disorder than more distant ghettos. The Newark and Detroit disorders received wide coverage in the press and by television, so it is not unreasonable to argue that the contagion effect did not diminish with distance. The question, then, is to what extent can the disturbances in New Jersey and Michigan be accounted for without recourse to a geographic contagion explanation?

To compare these explanations the list of disorders for the months of July and August which appear in the Commission's report (1968:324) was taken as inclusive of the turmoil during this period. With the aid of the Lemberg Center's compilation (Riot Data Review, 1968) dates were obtained for each disorder. All instances of racial violence which began before July 12 (the first day of the Newark riot) were eliminated, as were disturbances occurring after August 6 (five days after national guard troops were withdrawn from Detroit). The terminal date was selected as it marks the first hiatus in outbreaks of racial violence subsequent to the Newark riot. This left 109 disorders for the 4 week period. Because information on community characteristics was available only for cities with population greater than 25,000, all disorders in smaller cities were excluded. Ninety-one disturbances, which occurred in 83 cities, were left for analysis. These disorders clustered by region as follows: New Jersey, 12 disorders among 36 cities; Michigan, 8 disorders among 38 cities;[19] remaining states, 71 disorders among 599 cities with the requisite populations.

To what extent were disorders more likely to occur in New Jersey and Michigan? As a first approximation, we assume that all cities outside these two states had an identical probability of experiencing a disturbance. Outside these states, the expected number of disorders was 71/599 = .12 for each city. If communities in New Jersey and Michigan also incurred disorders at this rate

we should find (.12) (36) = 4.3 disorders in New Jersey, and (.12) (38) = 4.5 in Michigan. Consequently, a considerably larger number of cities in these two states experienced disorders than can be explained on the basis of the rate prevalent elsewhere. A New Jersey city was 2.8 times as likely to witness a disturbance during these weeks, a Michigan city 1.8 times as likely.

For a more accurate estimate we anticipate one finding from Section (6) and assume that the probability of a racial disturbance in a city is proportional to the numerical size of its Negro population. To incorporate this assumption, the cities outside New Jersey and Michigan were divided into ten categories according to Negro population size, then the dichotomous dependent variable, disorder vs. no disorder,[20] was regressed against the dummy variable representation of Negro population. In the resulting equation,[21]

$$Y = .015 - .267^{*}S + .014N_2 + .135^{*}N_3 + .198^{*}N_4 + .334^{*}N_5 + .411^{*}N_6$$

$$+ .472^{*}N_7 + .233^{*}N_8 + .852^{*}N_9 + .718^{*}N_{10}; \qquad R^2 = .318$$

the b-coefficients[22] specify the relation between Negro population size and the probability of violence in a community outside New Jersey and Michigan. For example, a northern city with population size N_5 could expect .015 + .334 = .349 disorders during these weeks.[23]

By substituting the dummy variable representation of Negro population size for cities in New Jersey and Michigan into this equation and summing the resulting estimates, an expected number of disorders can be computed for each state. The values obtained were 7.6 for New Jersey, 5.8 for Michigan. Consequently, in the instance where the Commission found clustering to be "particularly striking," 8 out of the 12 New Jersey disorders and 6 of the 8 Michigan disorders can be accounted for without recourse to a geographic contagion hypothesis. Moreover, since the disturbances are random events, a question can be raised as to whether the

observed values even represent significant departures from the expected numbers. My interest here, however, is not with examining this question in detail, only with indicating that the distortion produced by neglecting the effects of geographic contagion is not great in the context of the large number of disorders considered in this study.

To this point, we have been concerned with the basic assumptions which must be made for an adequate explanation of the distribution of racial disorders among cities. We began by considering the simple Poisson process which is intuitively appealing because it incorporates the concept of random events in time. Although this model proved inadequate for representing the outbreaks, we retained the basic specification of randomness in time while proceeding to relax the other assumptions of the model--that the common community riot-proneness value is constant over time, that communities need share an identical propensity, that a disorder exerts no influence on the likelihood of a subsequent upheaval, and that the effects of geographic contagion are inconsequential. Our conclusion is that only the heterogeneity assumption is actually necessary to account for the distribution of disorders, although some of the other factors may have influenced the distribution in a minor way.

6. Components of Heterogeneity: Method of Analysis

Having concluded that the heterogeneity thesis provides the most satisfactory explanation for the distribution of racial disorders in the 1960's, one remaining task, now that it can be validly argued that community characteristics affect riot-proneness, is to analyze the variation in this parameter in terms of community variables. This will be carried out in the context of comparing the predictive abilities of several explanations for the causes of disorders, each of which argues the importance of particular community characteristics. Before considering these explanations, however, a brief discussion of the methodological procedure is necessary.

For the purpose of relating riot-proneness to community characteristics we need only assume that the λ-values are distributed in accordance with some density function $f(\lambda)$, which has an estimated mean $\hat{E}(\lambda) = .507$, and variance $\hat{\sigma}^2_\lambda = 1.008$. The assumption of a particular form to $f(\lambda)$, such as a gamma distribution, is unnecessary. The procedure that is used requires the distribution of cities to be subdivided into ordered categories according to the cities' values on different explanatory variables. The objective in this division is to construct categories which have the following properties:

(1) Differences among the λ_c's, the category means of the city riot-proneness values, are large and vary over the ordered categories in a consistent manner.

(2) Among the cities in each category, the dispersion of the λ values is small.

A subdivision of the cities which has these properties will permit the heterogeneity in riot-proneness to be explained in a manner analogous to an analysis of variance scheme. By reducing the within-category variation, the cities which are grouped in the same cell will necessarily have similar riot-proneness values. As a consequence, the simple Poisson process (which, ideally, requires an identical λ-value for all communities) becomes applicable to the distribution of disorders within a category. In fact, the simple Poisson provides a useful index of the adequacy of a categorization, since it can be used to measure the residual within-category variation in λ. According to equation (2), when the simple Poisson assumptions are satisfied, $\text{var}(k) = E(k)$ since $\sigma^2_\lambda = 0$. Conversely, when heterogeneity is present, the magnitude of $[\hat{\text{var}}_c(k) - \bar{k}_c]$ provides an estimate of $\text{var}_c(\lambda)$, the residual variation in riot-proneness for category c. Furthermore, since the total variation is constant, when the values of $\hat{\text{var}}_c(\lambda)$ are small the between category variation--as indicated by the range of the category means--should be large. Our intent, therefore, is to find

the variables which provide the most adequate decomposition of the cities into non-overlapping categories, in the sense of reducing the within-category variation and increasing the range of the category means.

We illustrate this procedure by considering the roles of two demographic variables--community percent Negro, and the numerical size of the Negro population. Several investigators have suggested that percent Negro is an important determinant of the intensity of racial competition, that the fear of Negro encroachment upon the superior economic and social status of the white population is greater in large percent Negro communities. It has been reported (Blalock, 1957), for example, that racial discrimination in various social spheres--housing, education, and the economy--is correlated with community percent Negro. Negro access to the voting booth shows a similar relationship: Matthews and Prothro (1967:187) found a strong negative correlation ($r = -.46$) between county percent Negro and the rate of Negro voter registration in the South. Consequently, relations between the Negro and white populations in a community do differ according to community percent Negro. In large percent Negro cities there is likely to be more intense inter-racial competition, a more complete polarization of social relations by race and, for these reasons, perhaps greater frustration in the black ghettos.

Among American communities, the numerical size of the Negro population is correlated with percent Negro ($r = .25$). However, apart from tapping the aforementioned factors, this variable must be considered in its own right. Numerical size relates to the ability of the Negro community to mobilize a disorder, also to the number of incidents occurring in a city which might precipitate a disturbance. Moreover, Negro population size may be playing a more central role. If the racial disorders of the 1960's were primarily instances of Negro response to nationally generated stimuli, rather than to local community conditions, we should find that the number of Negroes is closely related to the likelihood of disorder.

Indeed, there is sufficient reason to suggest that during the 1960's Negroes became particularly receptive to the activities of the national government on their behalf. During this decade, leadership in pressing for the elimination of racial barriers in employment and housing has come primarily from the federal government. Two presidents, to date, have vigorously acknowledged, by word if not by action, America's commitment to racial equality and to the elimination of poverty. As a consequence of the extensive reportage given to these pronouncements, it is conceivable that Negroes now substantially base their expectations regarding future improvement in their status on cues coming from Washington. In this circumstance, unresponsive and frustrating actions with regard to Negro concerns which are taken at the national level are likely to have considerable impact on the attitudes and behavior of ghetto residents in all sections of the country. Congressional debates on anti-bias legislation, on funds to eliminate poverty and, more generally, on how much of a man a black person will be in the current fiscal year, are visible through television and the other media to Negroes in every community.

This contention, that Negro population size would be a crucial variable if racial disorders derive from national stimuli, is based on an alternate formulation of Tomlinson's thesis concerning the lack of importance of community differences, albeit one perhaps not intended by him. Here, we interpret Tomlinson's statement (1968:29) that Negroes in all cities have come to share in a common riot ideology to mean the following: Aside from universalistic factors such as age and sex, which may influence individual participation in disorders but are distributed in substantially the same way among Negro populations in all cities, individual Negroes have similar probabilities of participating in a disturbance regardless of where they reside. Consequently, riot-proneness is conceptualized as a personal characteristic, asocial, a response to factors exogenous to the community but highly visible in this day of wide

dissemination of news. The community value, in this formulation, is an aggregate of the individual propensities and would therefore reflect the numerical size of the Negro population.[24]

Table 5 presents three categorizations of the cities in terms of these variables. In Panel A the cities are grouped according to values of percent nonwhite. The cell divisions were drawn so that equal numbers of disorder cities--communities which have experienced at least one disturbance--would lie in each cell. The entries in the top row of Panel A are the category means ($\bar{k}_c$), which are unbiased estimates of the simple Poisson rates (λ_c) for the respective categories. The second row presents estimates of $\text{var}_c(\lambda)$, the within-category variance, which were calculated for each cell from equation (2) using the mean and variance of k, the number of disorders in a city. Panel B presents analogous statistics with the communities grouped by the numerical size of the nonwhite population; Panel C shows the category means and variances of λ when the two variables are cross-classified.

Table 5 about here

Applying the criteria introduced earlier to these three 4-cell categorizations, nonwhite population size (Panel B) evidently produces the most satisfactory decomposition of the cities. The category means increase uniformly over the range of this variable, varying from a low of .126 for communities with a nonwhite population smaller than 6,800 to a high of 2.800 for cities with a black population in excess of 40,000. Since the cell means can be interpreted as rates, it is correct to conclude that, on the average, a city in the "high" category experienced 2.800/.126 = 22 times more disorders during the period 1961-68 than did a typical "low" category city. Moreover, the estimates of $\text{var}_c(\lambda)$ for three of the four categories are considerably smaller than the value for all cities (1.008). Consequently, except for the 50 communities

TABLE 5. DECOMPOSITION OF $f(\lambda)$, CITIES GROUPED BY PERCENT NONWHITE AND NONWHITE POPULATION SIZE

PANEL A. Category Means and Variances, Cities Grouped by Percent Nonwhite[a]

	Percent Nonwhite				
Statistic	0	8.3	15.5	25	58 (All Cities)
$\hat{\lambda}_c$	.162	1.089	1.127	1.133	.507
$\hat{var}_c(\lambda)$	.174	1.454	2.241	2.008	1.008
n	432	79	79	83	673

PANEL B. Category Means and Variances, Cities Grouped by Nonwhite Population Size[a]

	Nonwhite Population				
Statistic	0	6,800	14,000	40,000	1.2M (All Cities)
$\hat{\lambda}_c$	.126	.780	1.027	2.800	.507
$\hat{var}_c(\lambda)$	.070	.208	.534	4.588	1.008
n	467	82	74	50	673

(Continued)

TABLE 5--CONTINUED

PANEL C. Category Means and Variances for Cross-Tabulation[b]

Percent Nonwhite		Nonwhite Population: Lo (0 – 14,000)	Nonwhite Population: Hi (14,000 – 1.2 M)
Hi (58 – 15.5)		$\hat{\lambda}_c$ = .455 $\hat{var}_c(\lambda)$ = .001 (66)	1.594 3.050 (96)
Lo (15.5 – 0)		.193 .158 (483)	2.250 2.167 (28)

a. Category boundaries were selected to place an equal number of disorder cities (42) in each cell.

b. Cities were grouped so that column and row sums of disorder cities would equal 84.

with largest Negro populations, the heterogeneity among cities in riot-proneness is substantially reduced when the cities are grouped by nonwhite population size. For cities with nonwhite population in excess of 40,000 a very large variance is present (4.588). However, this value does not detract from the otherwise satisfactory decomposition of the cities obtained in the preceding cells. As a result of the enormous range in Negro population among the cities in this category -- 40,000 to 1.2 million -- the large variance in riot proneness is expected.[25]

By comparison, the variable percent nonwhite is far less effective for grouping cities with the intention of reducing the heterogeneity in riot-proneness. For values greater than 8.3 percent, riot-proneness exhibits practically no covariation with percent nonwhite. The inadequacy of this categorization is further underscored by the very large values of $\text{var}_c(\lambda)$ for the three largest percent nonwhite cells, values which exceed the variance for the ungrouped cities (1.008). Consequently, percent nonwhite shows little power to differentiate among cities in riot-proneness; using this explanatory variable the variation remains largely "within-category." Finally, the cross-classification of the variables (Panel C) apportions the cities in a manner which is intermediate in effectiveness between that of each variable acting separately. Again, the contribution made by the numerical size variable is substantially greater than the relative size effect (compare the $\hat{\lambda}_c$ values for the columns with the values for the rows).

Summarizing the above findings, we conclude that the numerical size of the Negro population is an important consideration in an explanation of the inter-city distribution of racial disorders. At the very least, this variable measures the sheer ability of the Negro community to mount a disorder and should be controlled when the contribution from other community characteristics is considered. Moreover, if the disorders were reactions to frustrations generated outside the community such as at the national level, the numerical size variable is the only community characteristic which should be significant.

7. Components of Heterogeneity: Alternative Explanations

A number of explanations for the causes of disorders which stress the significance of community characteristics have been proposed. It has been suggested that racial violence is more likely in communities characterized by high levels of social disorganization; that rioting stems from the material conditions of Negro life and will occur where absolute deprivation is high; alternatively, that relative deprivation produces the most intense frustration and consequently disturbances are more likely where Negroes fare less well than white residents; that rioting has its genesis in the gap between expectations and fulfillment; finally, that violence is a response of the frustrated when the traditional channels for securing redress and articulating group interests are closed or unresponsive.

According to the social disorganization thesis, individuals who are poorly integrated into their community, who have few or weak personal bonds to primary groups and to secondary associations, are only marginally under the control of the community.[26] They are less constrained by the expectations of others, by collective norms defining appropriate behavior and, at the same time, are less likely to be acquainted with the institutionalized avenues for redressing grievances. As indicators of community disorganization, percentage change in total population from 1950 to 1960, percentage change in nonwhite population during this period, and percent dilapidated housing units were used. The initial two variables measure the increase in demand for community services (which, presumably, precedes the growth of supply), and the proportion of the population which is in the process of acculturating to the mores of a new community and establishing social linkages. The third variable is a proxy for several additional dimensions of social disorganization--inadequate living conditions, poverty, and crime.

Following the rationale of the absolute deprivation hypothesis one would argue that Negro rioting is basically a class phenomenon, a revolt of the

dispossessed and the hard-core poor (Lupsha, 1968:8; Downes, 1968:513-14). Rioting, in this view, is likely to occur among those who are most disadvantaged by the distribution of wealth and status in the country. In order to examine the explanatory ability of this "underclass theory," four variables which relate to the level of Negro life were included in the study -- per cent of the nonwhite male labor force employed in low status occupations (household workers, service workers, and laborers), the nonwhite male unemployment rate, nonwhite median family income, and nonwhite median education.

Alternatively, a relative deprivation hypothesis has been considered by several investigators (Gurr, 1968; Schulman, 1968). In general terms, this explanation presumes that Negroes have adopted white styles of life as standards for evaluating their own status. As David Matza writes (1966:622), "Profound degradation in an absolute sense may be tolerable or even pass unnoticed if others close at hand fare no better or if one never had reason to expect any better." With respect to rioting by Negroes, this thesis is incomplete until the white reference group is specified. One possibility is that Negroes compare themselves to white residents of the same community. To investigate this prospect, four variables which measure the relative position of Negroes in a community[27] were included the ratio of per cent of employed nonwhite males working at traditionally Negro occupations to per cent of the white male labor force so employed; the ratio of nonwhite median family income to white median family income; the ratio of the nonwhite male unemployment rate to the corresponding white rate; and the ratio of nonwhite median education to white median education.

An alternative reference group available to Negroes in the United States is a cliched version of white middle class life styles. For most black persons living in ghettos, the conception of a successful American family comes from the stylized petty dramas of television. If this TV image were used by blacks as a

standard for assessing their own status, the variation in number of disorders across communities would reflect the level of absolute deprivation of Negroes. Thus, the measures of absolute Negro deprivation are consistent with both an underclass explanation for racial violence and a relative deprivation thesis in which the reference group is a generalized conception of middle class life styles.

Relative deprivation explanations see the animus which incites frustration in the gap between one's situation (in income, status, etc.) and that of his reference group -- the larger the gap, the more discontent. In expectational theory, a reference standard is also employed, usually to refer to some desired state of affairs in the future such as the living standard one expects to attain. However, expectational theory commonly reverses the predictions made from objective indicators of deprivation since it locates the discontent in the psychological adjustment to an improving situation. When conditions are rapidly improving hope may outstrip reality, raising expectations and leaving people frustrated (Berkowitz, 1968:15). As an example, commenting on the French Revolution, Alexis de Tocqueville (1955:176) writes:

> ...it was precisely in those parts of France where there had been most improvement that popular discontent ran highest...Patiently endured so long as it seemed beyond redress, a grievance comes to appear intolerable once the possibility of removing it crosses men's minds. For the mere fact that certain abuses have been remedied draws attention to the others and they now appear more galling; people may suffer less, but their sensibility is exacerbated.

With regard to racial violence, this "rising expectations" thesis suggests that where the material situation of the Negro has undergone the greatest (or most rapid) improvement, the Negro community should be highly prone to disorder. Unfortunately, it was not possible to calculate over-time changes in nonwhite status for the cities, which is necessary in order to examine this thesis.[28] Data are available, however, for investigating a related expectational explanation.

The quotation from de Tocqueville suggests that nearness to an objective (without having achieved it) may also be a source of discontent. In this view, it is precisely where most of the differences which usually separate the underprivileged from their reference groups have been eroded that discontent would be highest. The inequities would seem less justifiable, less supportable, the fewer that remain. This viewpoint has also been suggested as a consideration in the occurrence of racial disorders (Lupsha, 1968:14; Gittell and Krupp, 1968:71). We will actually consider two formulations of this thesis which differ in the reference standard attributed to Negroes. If Negroes compare themselves to white residents of the same community, we should find a positive relationship between racial violence and Negro status -- the better situated the Negro population (relatively), the more disorders.[29] Alternatively, if the reference standard were the image of the white family which has been propagated by television, the indicators of absolute deprivation would be relevant -- the higher the (absolute) status of the Negro community, the more disorders. Consequently, a positive relation between either set of indicators of deprivation, and racial disorders, would support an expectational thesis.[30]

Finally, Lieberson and Silverman (1965) suggest that racial violence is more likely in communities which have unresponsive municipal political structures. To investigate this possibility we included four measures of political structure: Population per councilman, and percent of council members elected at large are measures which were used by Lieberson and Silverman; we added the dichotomous variables, partisan versus non-partisan election, and mayor-council form of city government versus other types. The rationale behind these variables is as follows: High population per councilman or a sizable proportion of the city council elected at-large reduces the political influence of a minority group, even when it is residentially concentrated; it has also been argued (Wilson, 1960:27-31)

that municipal governments are likely to be more responsive to a diversity of local interests when elections are partisan and where a mayor-council structure is present.

It is not feasible to compare these explanations of racial upheavals by the use of a tabular format since the number of variables is quite large. A regression procedure provides a more efficient approach in this circumstance and, more importantly, is consistent with the previous Poisson methodology. Until this point, the analysis proceeded by assigning the cities to a small number of categories, then using the cell means ($\bar{k}_c$) to estimate the respective category riot-proneness values (λ_c). By extension, if the number of categories were increased so that each contains a single city, we should use the number of riots in a city to estimate its category value. Consequently, the number of racial disorders which have occurred in a city during the time interval 1961-68 was taken as the dependent variable in the regressions against city characteristics.[31]

Column (1) of Table 6 presents zero-order correlations between each variable and the number of disorders. As others have reported (Downes, 1968; White, 1968) various community characteristics are correlated with racial violence. In fact, there are at least two variables in each cluster which are statistically significant Considering the over-all pattern exhibited by these correlations first, it is evident that racial disorders are more likely to occur where the level of life for the Negro is least oppressive according to objective measures. There are more disturbances where Negro disadvantage, relative to white residents, is small and where Negro attainment surpasses that of Negroes living elsewhere. Moreover, disorder prone communities tend to have stable populations and better quality housing.

Table 6 about here

TABLE 6. CORRELATIONS BETWEEN NUMBER OF DISORDERS AND INDICATORS OF COMMUNITY STRUCTURE

Community Attributes	(1) Zero-Order Correlation With Number of Disorders[a]	(2) Partial Correlation, Controlling for Region and Nonwhite Population[a]
Region and Nonwhite Population Size[d]		
South (Dummy)	-.198	-----
Nonwhite Population (log x)	.586**	-----
Indicators of Social Disorganization[d]		
Percent Change in Total Population	-.144**	-.071
Percent Change in Nonwhite Population	.044	-.022
Percent of Housing Dilapidated, 1950	-.180**	-.197**
Indicators of Absolute Deprivation[d]		
Percent of Nonwhite Males Employed in Traditionally Negro Occupations[b]	-.215**	-.005
Nonwhite Male Unemployment Rate	.067	-.006
Nonwhite Median Family Income	.182**	.036
Nonwhite Median Education	.078	-.017
Indicators of Relative Deprivation[d]		
Percent of Nonwhite Males Employed in Traditionally Negro Occupations, Divided by White Figure	-.166**	-.024
Nonwhite Median Family Income Divided by White Income	.148**	.006
Nonwhite Unemployment Rate Divided by White Rate	-.032	-.050
Nonwhite Median Education Divided by White Education	.151**	.030
Percent Nonwhite[c] ($\sqrt{x}$)	.221**	-.153**
Indicators of Political Structure[e]		
Population Per Councilman	.485**	.082
Percent of City Council Elected At-Large	-.069	-.015
Presence of Non-partisan Elections	-.016	.082
Presence of Mayor-Council Gov't.	.184**	.040

* P < .05
** P < .01

a. Number of disorders was coded 0-5+ to reduce the effect of outliers; then transformed by $\sqrt{x + 1/2}$. See Goulden (1952:98).
b. Service workers + Household workers + Laborers.
c. See footnote 30 regarding inclusion of this variable with the Indicators of Relative Deprivation.
d. Source: U.S. Census of Population, 1960.
e. Source: The Municipal Yearbook, 1967.

Turning to a consideration of the alternative explanations, support exists only for the expectational hypotheses. All the social disorganization indicators which are significant are opposite in direction from that predicted by theory; the political structure variables are inconsistent -- disorders are more likely in high population per councilman cities (consistent with their probable lower responsiveness), but also in communities where there is a mayor-council structure.

By contrast, all the indicators of relative deprivation and absolute deprivation which are significant are consistent with an expectational explanation -- disorders are more frequent where nonwhite occupational status and nonwhite median family income are high (relative to whites in the same community and to nonwhites elsewhere) and where nonwhite median education is high in comparison to the white figure. Racial disturbances are also more likely in communities with large percent nonwhite populations, raising the possibility of a competition thesis (see footnote 30). However, we will indicate momentarily that neither of these explanations for the location of disorders is correct.

Two additional variables play an essential role in the following discussion. The numerical size of the Negro population was shown earlier (Section 6) to be an excellent predictor of community riot-proneness. This variable also exhibits the largest zero-order correlation ($r = .586$) in Table 6. A dummy variable for region was also included in the analysis in recognition of the very different traditions of the South and non-South, which are only partially captured by the other indicators of Negro status. The dummy is negatively correlated with the number of disorders ($r = -.198$).

In light of the conclusion to Section 6, the appropriate approach for investigating the relation between community characteristics and racial disorders would be to control for the effects of nonwhite population size, rather than compare communities with vastly different potentials for mounting a disorder. Column (2)

of this table presents partial correlations, controlling for region and nonwhite population. Including a dummy for region as a control is tantamount to arguing that while the relationships (b-coefficients) between the independent variables and disorders are identical in each region, as a consequence of their different traditions there is an additive regional effect (negative for South).

After controlling on these variables, the results change dramatically. With the removal of nonwhite population, all but two of the independent variables become insignificant. Only dilapidated housing and percent non-white are still significant. Even the import of these two variables should not be overstated. In an analysis based on 413 observations, a level of significance can be achieved with a very low correlation (an r greater than .102 in magnitude is significant at the .05 level in Table 6). Moreover, a significant correlation does not necessarily imply high explanatory ability for the variable. Table 7 makes this point evident.

Table 7 about here

Column (1) of this table presents the proportion of variation (R^2) explained by each cluster of variables (with a dummy for South included) when regressed against the number of disorders. Nonwhite population is evidently the most important variable; together with South it accounts for 46.8 percent of the variation. By comparison, the three social disorganization measures plus South explain 6.0 percent of the variation, and all clusters except nonwhite population (17 variables) explain 42.0 percent of the variation. Consequently, if nothing else, nonwhite population and South are certainly efficient predictors. One can do better in predicting disorders with these two variables than with all other clusters and South.

However, nonwhite population is more than a proxy for other community characteristics. According to the figures in column (2), the addition of this variable to an equation containing any single cluster and South produces an increase in explained variance of at least 19 percentage points. When entered after all clusters plus South, this single variable accounts for an additional 9.3 percent of

TABLE 7. AMOUNT OF VARIANCE IN NUMBER OF DISORDERS EXPLAINED BY DIFFERENT VARIABLE CLUSTERS, FROM MULTIPLE REGRESSION ANALYSIS

Variable Cluster[b]	(1) Percent of Variance Explained by Each Cluster of Variables Acting Alone[a]	(2) Percent of Total Variance Explained by Nonwhite Population When Entered After Cluster and South	(3) Percent of Total Variance Explained by Cluster When Entered After Nonwhite Population and South
Nonwhite Population	46.8	----	---
Social Disorganization	6.0	43.1	2.3
Absolute Deprivation	6.3	40.6	.1
Relative Deprivation	20.4	27.7	1.3
Political Structure	28.5	19.2	.9
All Clusters, Except Nonwhite Population	42.0	9.3	4.5
All Clusters	51.3	----	---

a. Each cluster contains a dummy variable for South.

b. See Table 6 for the variables included in each cluster.

the total variation. Consequently, nonwhite population has substantial independent variation of its own and is not merely a convenient summary statistic for the other measures.

Yet, the crucial point is not that nonwhite population is so important for explaining the distribution of disorders -- the number of Negroes would appear to be a basic resource for Negro uprisings -- but that, after the effect of this variable has been removed, the other community characteristics account for so little. Column (3) presents the amount of independent variation in each cluster after partialling out the contributions from nonwhite population and South. Only the social disorganization measures explain as much as two additional percentage points of the variation in the dependent variable; even all four clusters together (16 variables) account for but an additional 4.5 percent.

The conclusion from this analysis is that the racial disturbances of the 1960's were not responses to conditions in the community. Disorder-prone cities do differ from their less traumatized neighbors in many significant respects. Racial violence is more likely where the Negro is better situated in occupational status, in education and income, where the political structure hinders responsive municipal government (high population per councilman ratio), and where the rate of population growth is small. However, these conditions have little to do with a community being prone to racial disorder. The probability of a disturbance is a function of the numerical size of the Negro population; little else seems to matter. The other characteristics of riot-prone communities are largely concomitants of cities with large Negro populations, but they are incidental to the occurrence of racial disturbances.

8. Conclusions

A range of hypotheses of varying specificity was examined in this paper in an attempt to account for the location of racial disorders. From the initial

analyses we were able to conclude that an assumption of heterogeneity in community riot-proneness, which derives from underlying differences among cities, is necessary to explain the distribution of disturbances. The remaining sections were devoted to uncovering the manner in which riot-proneness relates to other community characteristics. Our strategy was one of selecting variables which would permit comparisons to be made among several proposed explanations for the location of disorders. Hypotheses were considered which attribute disorder-proneness to weak social integration, to alienation from the political system, and to the frustrations stemming from deprivation or unattainable aspirations. In all instances, the explanation failed to account for the distribution of disorders. More generally, we concluded that differences in riot-proneness among communities cannot be explained in terms of variations in the objective situation of the Negro.

Instead, an explanation which identifies riot-proneness as an attribute of the individual seems better able to account for the findings. Rephrasing Tomlinson (1968), I would argue that while different communities are not equally riot-prone, the susceptability of an individual Negro to disorder does not depend upon characteristics of the community in which he resides (with the exception of region). As for the community propensity, it is an aggregate of the individual values -- the larger the Negro population, the higher the probability of a disorder.

There are social and political realities which account for this anomoly, but they have little to do with conditions in the community. Quite the contrary, I would identify those factors which have, in recent years, served to divert the focus of the Negro away from community affairs. The results reported here make most sense when interpreted against the role of the federal government in racial problems, the impact of television on attitudes and behavior, and the development of racial solidarity among black persons.

The federal government has been a most powerful proponent of Negro rights and the improvement of their economic situation. Yet, leadership in this area has been marked by vacillation, compromise, expedient retreat, and unfunded promises, a situation which must provoke feelings of frustration and betrayal. In conjunction with this, the wide availability of television now brings the activities of the federal government into the home; sets in the ghettos of Los Angeles, Newark, and Madison, Wisconsin expose viewers to identical stimuli, be they the insensitivities of powerful congressmen or the meagre impact of poverty programs.

Television must also be credited with stimulating the development of racial consciousness in Negroes. Sights of the insurrection of black persons elsewhere, or of Negroes being set upon by dogs, beaten, or worse, have enabled them to share common experiences, witness a common enemy, and in the process develop similar sensitivities and a community of interest. Previously fragmented and isolated from one another by class and spatial bounderies, the impact of television has fostered a consciousness of identity which transcends these divisions.

Each of these factors -- the national government, television, and the development of black solidarity -- has served to expose Negroes to stimuli which are uniform across communities. It is not that local conditions do not differ significantly for the Negro, rather it is that these variations are overwhelmed by the above considerations. Conversely, it was probably the absence of these factors in the early decades of this century which accounts for the relationship between disorders and the local situation of the Negro reported by Lieberson and Silverman (1965).

As a final note, this analysis suggests the fruitlessness of a piecemeal approach to eliminating the causes of racial disorders. The problem no longer is one of remedying the worst of conditions in a few ghettos but of massive

restructuring. Palliatives and modest repairs to a social fabric which denies dignity are unlikely to be adequate in light of a black consciousness and solidarity which transcends city boundaries.

Footnotes

[1]Smelser (1963) employs a more elaborate scheme for analyzing the determinants of collective behavior, though one consistent with this distinction. John C. Maloney (no date) has compared 96 metropolitan areas in terms of their riot-proneness scores. These were computed from a factor analysis of census and related materials on city characteristics and consequently measure underlying conditions. Lieberson and Silverman (1965) distinguish between the underlying conditions of riots and their immediate precipitants in substantially the way tehse terms are employed in the present paper.

[2]Downes (1968) has classified the immediate precipitants of outbreaks of racial violence for the period 1964-May 31, 1968. The most numerous category of incidents is titled, "Killings, arrest, interference, assault, or search of Negro men (and women) by police."

[3]Also relevant are those studies which have compared characteristics of the impact area with other sectors of the same city, or social attributes of rioters with those of non-rioters residing in the disturbance area. For examples of these works see National Advisory Commission on Civil Disorders (1968: chapter 2); Rossi (1968:69--208); Opinion Research Corporation (1968); Lachman and Singer (1968); and Flaming (1968).

[4]Lieberson and Silverman (1965) did investigate, and rejected the possibility that all communities have an equal likelihood of experiencing a riot. However, they were concerned with an earlier time period when disorders were mainly instances of inter-racial aggression. The impact of the news media, especially television, now functions to widely and uniformly disseminate information of a frustrating nature which could provoke disorders.

[5]The Poisson process refers to the formal specification of random events (in time or place). A process which satisfies these assumptions will have a Poisson distribution. The clustering of bacteria in sections of a Petri dish and the disintegration of radioactive particles in time are examples of Poisson processes. For additional applications see Feller (1957:147-154).

[6]A complete specification of the Poisson process requires a fourth assumption:

(iv) in any infinitesimal time interval Δt, at most one event (disorder) can occur. Furthermore, the probability of an event in Δt is $P_1(\Delta t) = \lambda \Delta t$, while the probability of no event in Δt is $P_0(\Delta t) = 1 - \lambda \Delta t$.

This requirement, that at most one event can occur in Δt, does not pose a problem for the current application since Δt can be made arbitrarily small. The derivation of the Poisson distribution from these four assumptions is straightforward (cf. Coleman, 1964:288). A particularly concise derivation can also be made using generating functions:

Let $X(t)$ be a random variable denoting the number of events in time t, which satisfies assumptions (i) - (iv). By assumption (iii), $X(t+\Delta t) = X(t) + X(\Delta t)$, with $X(t)$ and $X(\Delta t)$ being independently distributed random variables. Let $P_k(t)$ equal the probability that exactly k events occur in time t. Define $\pi_t(s)$ to be the generating function of $P_k(t)$, i.e.,

$$\pi_t(s) = \sum_{k=o}^{\infty} P_k(t) s^k$$

Since $X(t)$ and $X(\Delta t)$ are independently distributed, $\pi_{t+\Delta t}(s) = \pi_t(s)\pi_{\Delta t}(s)$ (c.f. Feller, 1957:251). By assumption (iv), $\pi_{\Delta t}(s) = 1-\lambda\Delta t + \lambda\Delta t s$ since $P_k(\Delta t) = 0$ for $k>1$. Consequently, $\pi_{t+\Delta t}(s) = \pi_t(s)[1-\lambda\Delta t(1-s)]$. Subtracting $\pi_t(s)$, dividing by Δt, and taking the limit as $\Delta t \to o$,

$$\frac{d\pi_t(s)}{dt} = \lim_{\Delta t \to o} \frac{\pi_{t+\Delta t}(s) - \pi_t(s)}{\Delta t} = -\lambda(1-s)\pi_t(s).$$

This first order differential equation may be solved by the method of separation of variables. Together with the initial condition $P_0(0) = 1$, the integration yields $\pi_t(s) = e^{-\lambda t(1-s)}$. By use of Maclaurin's series expansion for e^x (Taylor, 1955:543),

$$\pi_t(s) = e^{-\lambda t}\, e^{\lambda t s} = e^{-\lambda t}\left[1 + \lambda t + \frac{(\lambda t)^2}{2!} + \frac{(\lambda t)^3}{3!} + \ldots\right].$$

Each term of this series is a term of the Poisson distribution.

[7]This is desirable since the different categories--interracial violence, Negro insurrection, white aggression--may reflect different tensions and underlying conditions. Lieberson and Silverman (1965) restricted their population of riots to incidents of interracial violence.

[8]For support of this contention see Spilerman (1970).

[9]The term simple Poisson process will be used to refer to the full Poisson model; in particular, to the restrictions that λ be constant over time and identical for all communities. When either assumption is relaxed we have a more general Poisson process.

[10]Note that if $\lambda(u) = \lambda$, then $\Lambda = \int_0^t \lambda du = \lambda t$ which is the parameter of the simple Poisson process. For further discussion of the time dependent Poisson consult Chiang (1968:48-9).

[11]Smelser's distinction (1963:15) between structural conduciveness and structural strain and the growth and spread of a generalized belief is a useful separation among types of underlying conditions. The combination of frequent expressions of commitment on the part of national leaders which has characterized the 1960's, with the meagre redressing of grievances which has occurred, could explain the over-time increase in disorders in terms of a "rising expectations" framework. For applications of this argument see James C. Davies (1962).

[12]For the simple Poisson both parameters have the same value: $E(k) = \sigma_k^2 = \lambda$.

[13]Note that we have not yet placed any assumptions on the form of $f(\lambda)$. Any density function which we propose must have this mean and variance.

[14]With $\alpha=1$, $f(\lambda) = \beta e^{-\beta\lambda}$ which is a negative exponential; with $\beta=1$, $f(\lambda) = \frac{\lambda^{\alpha-1}e^{-\lambda}}{(\alpha-1)!}$ which is a Poisson distribution (if α is an integer) and measures the probability of $\alpha-1$ events as a function of the parameter λ; with $\alpha = \frac{n}{2}$ and $\beta = \frac{1}{2}$, $f(\lambda)$ is a chi-square distribution with n/2 degrees of freedom.

[15]The first term in this product, $(\alpha+_k k-1)$, is the binomial coefficient and is defined to equal $\frac{(\alpha+k-1)(\alpha+k-2)\ldots(\alpha+1)\alpha}{k!}$ for any real number k. For a more detailed description of the compound Poisson consult Chiang (1968:49-50) or Parzen (1962:57-58).

[16]Recall that we inferred from equation (2) that the estimates of the mean and variance of $f(\lambda)$ must be $\hat{E}(\lambda) = .507$, $\hat{\sigma}_\lambda^2 = 1.008$. This is easily shown to hold under the assumption that $f(\lambda)$ is gamma with the indicated parameter values. The gamma distribution has mean α/β and variance α/β^2. Substituting $\hat{\alpha}$ and $\hat{\beta}$ from equations (7) and (8), we obtain $\hat{E}(\lambda) = .255/.502 = .507$ and $\hat{\sigma}_\lambda^2 = .255/(.502)^2 = 1.008$.

[17]See Coleman (1964:299-301) on estimating δ, μ. The reinforcement model is specified by the following system of differential equations --

$$(1)\quad \begin{cases} \dfrac{dP_o(t)}{dt} = -\delta P_o(t) \\ \dfrac{dP_k(t)}{dt} = -(\delta+k\mu)P_k(t) + [\delta + (k-1)\mu]P_{k-1}(t); \quad k > 1 \end{cases}$$

with initial conditions $P_0(0) = 1$, and $P_k(0) = 0$ for $k>0$. Coleman (1964:312) solves this system using a recursive procedure, but it boggles the mind to understand how he recognized the resulting distribution to be a negative binomial. A somewhat different procedure, employing generating functions, makes this fact readily apparent:

Let $\pi(t,s) = \sum_{k=0}^{\infty} P_k(t)s^k$ denote the generating function of $P_k(t)$. Take the generating function of the system of differential equations (1). This produces the following partial differential equation:

$$(2) \qquad \frac{\partial \pi(t,s)}{\partial t} + \mu s(1-s) \frac{\partial \pi(t,s)}{\partial s} = \delta(s-1)\pi(t,s)$$

Equation (2) may be solved for $\pi(t,s)$ by using Lagrange's method (Saaty, 1961: 370). This yields --

$$\pi(t,s) = \left[\frac{1}{1-(e^{\mu t}-1)(s-1)}\right]^{\delta/\mu}$$

$$= \left[\frac{1}{1+e^{\mu t}-1 - (e^{\mu t}-1)s}\right]^{\delta/\mu}$$

$$= \left[\frac{e^{-\mu t}}{1 - (1-e^{-\mu t})s}\right]^{\delta/\mu}$$

which is the generating function of the negative binomial distribution with $p = e^{-\mu t}$ and $q = (1-e^{-\mu t})$ (c.f. Feller, 1957:253).

[18]Note that this evidence is consistent with both the positive reinforcement and heterogeneity hypotheses. The cities in which disorders occurred during 1961-1964 may have been more riot-prone in succeeding years because of the after-effects from these disorders, or they may be structurally different from other cities and consistently have been more riot-prone.

[19]One Ohio disorder, in Toledo, was linked by the Commission to the Detroit riot. This city is included with the Michigan figures. Consequently, Michigan

is analyzed as having eight disorders among 38 cities instead of seven disorders among 37 cities. This arrangement will bias the data in favor of the geographic contagion thesis.

[20]Where a city experienced several disorders (New York had four) the observation for that city was replicated for each occurrence. Since the b-coefficients from the regression measure the mean number of disorders for a category, this procedure is more conservative than including a multiple-disorder city as a single observation and using a dependent variable which counts the number of disorders.

[21]The variables were defined as follows: S = 1 for a southern city, zero otherwise; N_1 to N_{10} each equal one for a city with the specified nonwhite population, zero otherwise. The specified ranges are: N_1 -- less than 500; N_2 -- between 500 and 1,500; N_3 -- between 1,500 and 2,500; N_4 -- between 2,500 and 6,000; N_5 -- between 6 and 15 thousand; N_6 -- between 15 and 25 thousand; N_7 -- between 25 and 50 thousand; N_8 -- between 50 and 100 thousand; N_9 -- between 100 and 200 thousand; N_{10} -- greater than 200 thousand. The variable N_1 is superfluous and does not appear in the equation. The constant term indicates the relationship between cities in this category and disorders.

[22]Starred coefficients would be significant at the .05 level if the error term were normally distributed. This is not the case in a regression against a dichotomous dependent variable (Goldberger, 1964: 249). However, the discussion here does not rest upon the statistical significance of particular variables.

[23]When the dependent variable is dichotomous and coded 0-1, estimates from the resulting equation can be interpreted either as the probability of an event (disorder) or as the expected number of events.

[24]Although this formulation is couched in terms of the individual it is also consistent with a social explanation. The numerical size variable may be a proxy for other ghetto characteristics which vary with Negro population size and, in

turn, influence riot-proneness. As examples, residential segregation, the organizational density of the ghetto, black consciousness, and militancy probably covary with Negro population (Taeuber and Taeuber, 1965:36; Marx, 1967:52). As we have no information on the internal organization of Negro communities we cannot assess the importance of these factors.

[25]The large variance could also result from a greater diversity in community organization among large Negro enclaves than among small ones. The combination of residential segregation, high dollar value of black controlled resources, and few crosspressures due to isolation from the white population, provide large ghettos with the resources for constructing an autonomous social existence which may have resulted in a variety of ghetto organizational structures. Therefore, if the potential for disorder were to reflect the internal organization of the Negro community (see footnote 24) a large variance would still be expected in this cell.

[26]See Downes (1968:513) for support of this argument as a cause of racial disorders in the 1960's.

[27]Several of the explanations considered in this section are social-psychological while the indicators of discontent are all demographic variables. The results must therefore be viewed with the usual cautions about inferring individual level relationships from ecological data. For example, if disorders were to occur where the Negro population suffers great deprivation (according to objective indicators) this would not necessarily mean that the individuals who riot are the most deprived. However, ecological level relationships are suggestive of individual level hypotheses. Moreover, they may be true as "social facts." For example, where absolute deprivation is high the Negro community may be poorly organized and politically ineffective thereby raising the level of frustration for all Negro residents.

[28]Except for southern communities, the 1950 Census of Population presents characteristics of the nonwhite population only for places with 50,000 nonwhite inhabitants or more. By comparison, in the 1960 Census this data is available for communities with 1,000 or more nonwhites.

[29]Note that a positive relationship between disorders and relative Negro status requires two of the measures to be positively correlated (relative nonwhite income, relative nonwhite education) and two negatively correlated (relative nonwhite employment in traditionally Negro occupations, relative nonwhite unemployment).

[30]A positive relationship between relative Negro status in a community and racial violence would also be consistent with a very different explanation. If racial unrest were a result of inter-racial competition for economic and status rewards, the competition should be most intense where the races are similar to each other in educational attainment, occupation, and median income; in other words, where Negro and white individuals are interchangeable in the social and economic life of the community, rather than the occupants of complementary statuses. In fact, Lieberson and Silverman (1965), in their study of pre-1960 upheavals, conclude that racial violence is more probable in communities where Negro and white males have similar occupational statuses and earn proximate incomes. Because of this interpretation, the variable percent Negro, which was introduced in Section 6 as a measure of inter-racial competition, is included in this variable cluster.

Nevertheless, the competition thesis seems inadequate as an explanation for the disorders of the 1960's. In earlier riots, the underlying conditions were often directly rooted in racial competition -- access to jobs, the use of Negroes as strikebreakers -- also, the character of those disorders was inter-racial with many instances of substantial aggression by whites against Negroes. During the

present decade, however, racial disturbances have been uniquely situations of Negro aggression. For the competition argument to be plausible one must therefore assume, not only that racial competition will be greater to the extent that Negroes and whites are substitutable over a wide range of social roles but that, unlike earlier periods, it is now invariable the Negro who emerges defeated and frustrated from the competition.

[31]Data on nonwhite population characteristics are published in the 1960 Census of Population for 413 communities. This value therefore constitutes the number of observations in the reported regressions.

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