

THE CAUSES OF RACIAL DISTURBANCES: A COMPARISON OF ALTERNATIVE EXPLANATIONS *

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A range of hypotheses of varying specificity is examined in this paper in an attempt to account for the location of racial disorders during the 1960's. The initial sections consider what general assumptions must be met by any satisfactory explanation of the distribution of the disorders. Mathematical models are constructed which embody the most prevalent assumptions as to the determinants of community disorder-proneness, and their predictions are compared with empirical data. The specific assumptions considered are: (1) all cities have an identical probability of experiencing a disorder; (2) communities are heterogeneous in their underlying disorder propensities; (3) a process of reinforcement characterizes the occurrence of disorders; (4) 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 assumes the importance of particular community characteristics. All are rejected in favor of an explanation which argues that the racial disorders of the 1960's were responses to frustrations which are uniformly felt by Negroes, irrespective of their community situations.

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 the racial

turmoil, governmental programs have been initiated to ameliorate the situation of Negroes in urban centers.

Accompanying this concern with remedying past injustices, considerable interest has focused on the causes of the disorders. Why, in particular, 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 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 respective abilities to account for the loca-

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tions of outbreaks during the 1960's. We will follow the conceptualization of collective behavior which has been employed by other investigators and distinguished between *underlying causes* and *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 from empirical investigation, to relate to "disorder-proneness." Precipitating factors, by contrast, are random occurrences, the kind of events which occur daily in most communities and usually are disposed of routinely. The particular events which precipitated the disorders of the 1960's, for example, commonly involved some interracial incident² (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, 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 nonneutrality of institutional arrangements for the likelihood of collective behavior. More concretely, Lieberman and Silverman (1965), in a comparison of 76 cities which experienced race riots between 1913

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 *disorder-proneness* scores. These were computed from a factor analysis of census and related materials on city characteristics and consequently measure underlying conditions. Lieberman and Silverman (1965) distinguish between the underlying conditions of riots and their immediate precipitants in substantially the way these terms are employed in the present paper.

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

and 1963 with matched nonriot cities, conclude that riot cities are more likely to have unresponsive municipal political structures and a high level of economic competition between the races. Thus, by distinguishing between precipitants and underlying conditions, and assuming 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 However, several criticisms can be leveled at the methodology of these studies. (1) They have generally resorted to a dichotomous classification of cities, contrasting riot with nonriot communities. As a consequence, the considerable information that some cities have experienced numerous disorders has been disregarded. Yet, if cities are heterogeneous in disorder-proneness, it seems more reasonable to expect them to vary on this attribute in a continuous manner than be limited to a binary value. (2) Although a research strategy which compares paired riot and nonriot 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 nonriot cities to allow for matching on region and population size as Lieberman and Silverman had done. Clearly, a multivariate technique is required. And (3) 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 had escaped racial

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 nonrioters residing in the disturbance area. For examples of these works see *National Advisory Commission on Civil Disorders* (1968, Chapter 2); Rossi *et al.* (1968); Opinion Research Corporation (1968); Lachman and Singer (1968); Flaming (1968); and Campbell and Schuman (1968).

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 nondisorder cities in any manner which relates to disorder-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 distribution of disturbances among cities could be estimated by the Poisson distribution—

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

where k = number of disorders, λ = the rate of outbreaks, and t = the time interval. More precisely, the Poisson process⁵ is derived from the following substantive assumptions:

- (1) λ , the disorder-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 that 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

⁴ Lieberman 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 interracial violence. The impact of the news media, especially television, now functions to widely and uniformly disseminate information of a frustrating nature which could precipitate disorders.

⁵ The Poisson process refers to the formal specification of random events. A stochastic 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

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

(k) Number of Disorders	(n _k) Proportion of Cities with k Disorders (Calculated from Poisson Distribution, $\lambda t = .60$)
0	55
1	33
2	10
3	2
4	0
5	0
6	0
Σn_k	100

Table 1 presents a hypothetical distribution of disorders which conforms to the Poisson assumptions. The import of this example is that although 55% of the cities would not have experienced a disturbance and 45% would have one or more outbreaks of violence, *all cities, by assumption, have an identical disorder-proneness value.* In this circumstance, the procedure of pairing riot with nonriot cities to ascertain structural differences between them would result in significance being attributed to chance associations between community characteristics and disorders.

There are other explanations which would also result in attributing significance to community characteristics which actually stems from sampling error. If the Poisson assumptions were modified so that after each outbreak of racial violence in a city its disorder-proneness value were altered, increased or decreased to reflect positive or negative reinforcement, then once riots have occurred the cities would, in fact, differ in disorder-proneness. 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 from previous disturbances in a community, polarizing racial attitudes

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. Feller, 1957:401).

or, perhaps, increasing communication and understanding instead. 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 disorder-proneness which stems from the variation in community organization.⁷

Conceptually, the following pages can be divided into two parts. Sections 2–5 consider what general requirements 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 which make the indicated assumptions.

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 disorder-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, we collected information on all

⁷ The Poisson model is attractive 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 an interpretable measure of the disorder-proneness value common to the cities. λ has the dimensions of a rate, events/time.

instances of substantial racial violence⁸ during 1961–1968 among the 673 cities in the contiguous United States with populations exceeding 25,000 in 1960. The main sources of information on racial disturbances were the Lemberg Center's *Riot Data Review* (1968b), the Congressional Quarterly's *Civil Disorder Chronology* (1967), the *Report of the National Advisory Commission on Civil Disorders* (1968:323–324), and the *New York Times Index*. Because of the large number of disturbances⁹ it was possible to reduce heterogeneity in the type of racial disorder¹⁰ without severely limiting the number of cases. 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 disorders had this character. Where it could be documented, disorders which had their origins in civil rights demonstrations, in school settings, or in other planned activities which might provide a focus for contending groups, were also excluded. These incidents were deleted since our method of explanation requires that the outbreaks be conceptualized as random occurrences. Moreover, our concern is with ascertaining the extent to which racial disturbances 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 vio-

⁸ For our purpose, instances of racial violence involving 30 or more individuals were classified as 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. For support of this contention see Spilerman (1970).

⁹ A total of 820 racial incidents are reported in these sources. Many, however, were too minor to be considered disorders. Twenty-four events were excluded for reasons stated below.

¹⁰ This is desirable because the type of disorder—interracial violence, Negro insurrection, white aggression—may reflect particular tensions and underlying conditions. Lieberman and Silverman (1965) restricted their study to incidents of interracial violence.

lence, 341 disorders, being instances of Negro aggression having "spontaneous" origin, remained for analysis.

T. M. Tomlinson has suggested that a "riot ideology" has become fashionable in black communities and that a significant minority of Negroes now 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 disorder-proneness values for all cities, disorders escalating from incidents which are random events, no after effects from a disorder on the city's subsequent disorder propensity), then a test of Tomlinson's thesis can be constructed from the distribution of disturbances.

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

TABLE 2. DISTRIBUTION OF RACIAL DISORDERS FOR 1961-1968, TOGETHER WITH PREDICTED VALUES FROM THE POISSON DISTRIBUTION *

(k) Number of Disorders	(n _k) Number of Cities with k Disorders (actual)	$\hat{\Lambda}$ (n _k) Number of Cities with k Disorders (Calculated from Poisson, $\lambda t = .507$)
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^2_k	1.515	

* Includes only instances of black aggression, spontaneous origin.

TABLE 3. OVER-TIME DISTRIBUTION OF RACIAL DISORDERS FOR 1961-1968 *

(k) Number of Disorders	(n _k) Number of Cities with k Disorders				
	Year				
	1961-	1965	1966	1967	1968
0	658	665	645	566	569
1	10	8	23	85	78
2	3		4	18	18
3	2		0	3	6
4			0	1	1
5			1		1
Σn_k	673	673	673	673	673
\bar{k}	.033	.012	.053	.199	.208
S^2_k	.058	.012	.092	.258	.314

* Includes only instances of black aggression, spontaneous origin.

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

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

(2) The Poisson process requires all communities to have an identical disorder-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 outbreaks 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.

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.

3. THE TIME DEPENDENT POISSON PROCESS

The first of the departures from the simple Poisson process¹¹ 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.¹² 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 turmoil 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,

¹¹ The term *simple* Poisson process will be used to refer to the full Poisson model, in particular, to the specification that λ is constant over time and identical for all communities. When either assumption is relaxed we have a more general Poisson process.

¹² 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 (1968:48-49).

the structural and demographic characteristics of the individual cities are too stable to account for this volatility in the rate of disturbance.¹³ However, because we have now shown that over-time change, alone, in a common community propensity to 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 disorder-proneness, must be incorrect. Consequently, if Tomlinson meant to suggest that all cities have an identical likelihood of experiencing a racial disorder, his thesis is not supported by the data. In Section 7 we will consider an alternative formulation of Tomlinson’s contention.

4. HETEROGENEITY OR REINFORCEMENT?

Heterogeneity. 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 disorder-proneness value. Elimination of this assumption is suggested by the conclusions of other investigators (Lieberman and Silverman, 1965; Downes, 1968; White, 1968), and by the following statistical point: If racial disorders are random events in time, but communities differ from one another in disorder-proneness, then the *variance* of the number of outbreaks in a city should exceed the *expected* number of occurrences.¹⁴ This fact derives from the general decomposition formula for a variance in terms of the conditional variance (Parzen, 1962:55)—

¹³ 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 meager redressing of grievances which has occurred, could explain the over-time increase in disorders in terms of a “rising expectations” framework (i.e., the growth and spread of a generalized belief). For elaboration of this type of argument see James C. Davies (1962).

¹⁴ For the simple Poisson both parameters have the same value: $E(k) = \sigma_k^2 = \lambda$.

$$\begin{aligned} \text{var}(k) &= E[\text{var}(k|\lambda)] + \text{var}[E(k|\lambda)] \\ &= \frac{\lambda}{\lambda} + \sigma^2_{\lambda} \quad (\text{for a Poisson process})^{15} \end{aligned} \quad (2)$$

If communities are heterogeneous in their propensities to incur racial violence then $\sigma^2_{\lambda} > 0$ and, from Equation (3), $\text{var}(k) > E(\lambda)$. From Table (2) $S^2_k = \text{var}(k) = 1.515$ 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 (3), $\hat{\sigma}^2_{\lambda} = 1.008$.¹⁶

With relaxation of the assumption that the disorder-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 disorder-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 *compound* 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 disorders is equal to the sum of the products of two quantities:

¹⁵ 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 .

¹⁶ 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.

(a) The proportion of cities having a propensity equal to λ , and (b) the probability that a city with value λ will have k disorders during the eight-year interval. 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,

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

where $\Gamma(a) = \int_0^{\infty} y^{\alpha-1} e^{-y} dy$. This is not a very restrictive density function. The family of gamma distributions includes as special cases many common unimodal functions such as the negative exponential and the chi-square.¹⁷ For this reason, the gamma is often used where the actual distribution is unknown.

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

$$\begin{aligned} P_k &= \int_0^{\infty} \frac{\lambda^k e^{-\lambda}}{k!} \frac{\beta^{\alpha}}{\Gamma(a)} \lambda^{\alpha-1} e^{-\beta\lambda} d\lambda \\ &= \frac{\Gamma(k+a)}{k! \Gamma(a)} \beta^{\alpha} (\beta+1)^{-(k+\alpha)} \end{aligned}$$

Using the recursive property of the gamma function, $\Gamma(a) = (a-1)\Gamma(a-1)$, this result may be rewritten in the form

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

which is a negative binomial distribution¹⁸ with parameters a and $p = \frac{\beta}{\beta+1}$.

¹⁷ With $a=1$, $f(\lambda) = \beta e^{-\beta\lambda}$, which is a negative exponential; with $a = \frac{n}{2}$ and $\beta = \frac{1}{2}$, $f(\lambda)$ is a chi-square distribution with $n/2$ degrees of freedom.

¹⁸ The first term in this product, $\binom{\alpha+k-1}{k}$, is the binomial coefficient and is defined to equal $\frac{(\alpha+k-1)(\alpha+k-2)\dots(\alpha+1)\alpha}{k!}$ for any real number α . For details on the integration leading to Equation (4), consult Chiang (1968:49); for the properties of the negative binomial, see Parzen (1962:13-15).

Therefore, if racial disturbances are random events in time, and if communities are heterogeneous in disorder-proneness (but distributed in accordance with a gamma density function), we would expect the disorders to follow a negative binominal distribution. Using the mean and variance formulas for a negative binominal (Chiang, 1968:50), together with the empirical values \bar{k} and S^2_k from Table 2 to estimate $E(k)$ and $\text{var}(k)$, we can solve for estimates of α and β —

$$\hat{\beta} = \frac{\bar{k}}{S^2_k - \bar{k}} = .502 \tag{5}$$

$$\hat{\alpha} = \hat{\beta}\bar{k} = .255 \tag{6}$$

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% of the time.

TABLE 4. DISTRIBUTION OF RACIAL DISORDERS FOR 1961-1968, TOGETHER WITH PREDICTED VALUES FROM NEGATIVE BINOMIAL DISTRIBUTION *

(k) Number of Disorders	(n _k) Number of Cities with k Disorders (actual)	\hat{A} (\hat{n}_k) Number of Cities with k Disorders (Calculated from Negative Binomial, $\alpha = .255, \beta = .502$)
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^2_k	1.515	d.f. = 5

* Includes only instances of black aggression, spontaneous origin.

** Values in cells 7-11 were combined.

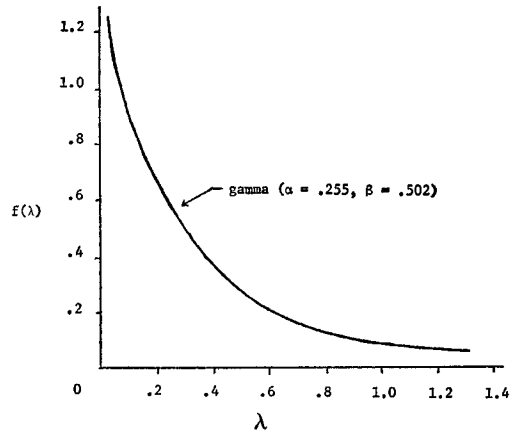


FIGURE 1. DISTRIBUTION OF DISORDER-PRONENESS VALUES

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 disorder-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.¹⁹

Using the estimates of α and β , the particular gamma density function which characterizes the distribution of disorder propensities 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.

Reinforcement. The assumption of heterogeneity is necessary if one intends to explain disorder-proneness in terms of community

¹⁹ Recall, we inferred from Equation (3) that the estimates of the mean and variance of $f(\lambda)$ must be $\hat{E}(\lambda) = .507$, $\hat{\sigma}^2_{\lambda} = 1.008$. 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 (5) and (6), we obtain $\hat{E}(\lambda) = .255/.502 = .507$ and $\hat{\sigma}^2_{\lambda} = .255/ (.502)^2 = 1.008$.

characteristics. However, the mere fact that the disorders can be adequately described by a negative binomial distribution which has been deduced from a heterogeneity specification does not prove the validity of this assumption. In fact, James S. Coleman (1964) has shown that the negative binomial distribution may be derived 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 initially shared an identical disorder-proneness value but experienced an increase in this parameter after a disturbance, a negative binomial 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 disorder-proneness value δ . With each outbreak of violence in a city, however, its propensity 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 $\mu = 1.10$.²⁰

The reinforcement explanation of the inter-city distribution of racial disorders has

²⁰ See Coleman (1964:299-301) on estimating δ and μ . The reinforcement model is specified by the following system of differential equations—

$$\begin{cases} \frac{dP_0(t)}{dt} = -\delta P_0(t) \\ \frac{dP_k(t)}{dt} = -(\delta + k\mu)P_k(t) + [\delta + (k-1)\mu]P_{k-1}(t); \\ k \geq 1, \end{cases}$$

with initial conditions $P_0(0)=1$, and $P_k(0)=0$ for $k > 0$. It is well known to biostatisticians as the *immigration-linear birth* model. 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 more efficient approach involves taking the generating function (Feller, 1957:248) of the system, then solving the resulting partial differential equation by means of Lagrange's method (Saaty, 1961:99) to obtain the generating function of the negative binomial distribution.

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 disorder-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 violence is unlikely until the tension rebuilds.

Consequently, as an alternative explanation for the distribution of disorders, one can reasonably posit that there is both an exogenous component (δ) to the disorder-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 disorder-proneness—some will have the value δ , others $\delta + n\mu$, where n equals the number of previous disturbances 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 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 cities during a brief time interval are meaningless. In fact, the data covering all cases of racial disturbance unequivocally refute the hypothesis of negative reinforcement. For example, the 15 cities reported to have experienced disorders during 1961–1964 include all four cities with greatest numbers of disturbances during 1965–1968, and six of the eleven most disorder-prone cities during this period. Eleven of these 15 cities experienced two or more disturbances during 1965–1968, although the rate for all cities was $74/673 = .110$. Consequently, the data are not consistent with a *negative* reinforcement process.²¹

²¹ Note that this evidence is consistent with both the positive reinforcement and heterogeneity hy-

In order to choose between heterogeneity and the positive reinforcement explanation, both of which predict a negative binomial 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 in that city, we should find the *variance* of the number of disorders increase in successive years. In effect, the heterogeneity in disorder-proneness would be increasing.

Information regarding the over-time distribution of disorders is presented in Table 3. According to the row labeled S^2_k , the variance of the distribution does increase over successive years. For the period 1965–1968, the values of S^2_k were .012, .092, .258, and .314. The change in S^2_k 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 disorder-proneness parameter $\delta + n\mu$, remains constant over time. If, instead, the process were actually one of heterogeneity but with each city's unique disorder propensity increasing over time in response to a uniform national stimulus, we would also find the afore-noted 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 become more disorder prone. However, in 1966, 28 cities ex-

potheses. 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.

perienced 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 racial turmoil were experiencing an increase in disorder-proneness during 1965–1967. This finding is clearly inconsistent with the reinforcement thesis. For this reason, even though the negative binomial fails to distinguish between the alternative explanations, heterogeneity and positive reinforcement, the weight of evidence is in support of the former.²²

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. "Ninety-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 Burnswick—people had friends living in Newark. Everywhere the telephone provided a direct link to the scenes of violence."

The assumptions of geographic contagion

²² There is an additional reason for preferring the heterogeneity explanation. As a result of the Negro revolt character of the 1960 disorders, we should expect the numerical size of the Negro population to be a factor in disorder-proneness. A number of communities have fewer than 100 Negro residents. Considering the probable sex and age distribution of these few individuals, the resources necessary for collective action would appear to be lacking. By contrast, many of our largest cities have several geographically distinct black ghettos, each of which could sustain a disorder.

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 impact of geographic contagion on the location 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 disturbance than more distant ghettos. The Newark and Detroit disorders were given wide coverage by the press and 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, we took the list of disorders for the months of July and August which appear in the Commission's report (1968:324) as inclusive of the turmoil during this period. With the aid of the Lemberg Center's unpublished compilation of the 1967 disorders (Lemberg Center, 1968a), we obtained dates for each incident.

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 three-week period. Because information on community characteristics was available only for cities with populations 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, twelve disorders among 36 cities; Michigan, eight disorders among 38 cities;²³ 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 (7) and assume that the likelihood of racial disturbance in a city is proportional to the numerical size of its Negro population and is a function of region. To incorporate this assumption, the cities outside New Jersey and Michigan were divided into ten categories

²³ 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.

according to Negro population size, then the dichotomous dependent variable, disorder vs. no disorder,²⁴ was regressed against the dummy variable representation of Negro population. In the resulting equation,²⁵

$$Y = .015 - .267*S + .014N_2 + .135*N_3 \\ + .198*N_4 + .334*N_5 + .411*N_6 \\ + .472*N_7 + .233*N_8 + .852*N_9 \\ + .718*N_{10}, \quad R^2 = .318$$

the b-coefficients²⁶ 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.²⁷

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, one can compute an expected number of disorders for each state. The values ob-

²⁴ 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.

²⁵ 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 size category and disorders.

²⁶ Asterisked coefficients would be significant at the .05 level if the error term were homoscedastic. 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.

²⁷ 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.

tained were 7.6 for New Jersey, 5.8 for Michigan. Consequently, in the instance where the Commission found clustering to be "particularly striking," eight out of the twelve New Jersey disorders and six of the eight 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. Our 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 disorder-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. SOURCES OF HETEROGENEITY: ALTERNATIVE EXPLANATIONS OF DISORDERS

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 disorder-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.

A number of explanations of this genre 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; and finally, that violence is a response of the frustrated when the traditional channels for securing redress and articulating group interests are closed or unresponsive.

Social Disorganization. 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 secondary associations, are only marginally under the control of the community.²⁸ 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 of dilapidated housing units were used. The initial two variables measure the increases in demand for community services (which, presumably, precede the growth in 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 correlates of social disorganization—inadequate living conditions, poverty, and crime.

Deprivation Explanations. Following the rationale of the absolute deprivation thesis,

²⁸ See Downes (1968:513) for support of this argument as a cause of racial disorders in the 1960's.

one would argue that Negro rioting is basically a class phenomenon, a revolt of the dispossessed and hard-core poor (Lupsha, 1968:8; Downes, 1968:513-514). 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—percent 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, we included four variables which measure the relative position of Negroes in a community:²⁹ the ratio of percent of nonwhite males working in traditionally Negro occupations to percent 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.

Another reference group available to Negroes in the United States is a clichéd 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 should 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.

Expectational Arguments. 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 expect-

²⁹ 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. Thus, 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.

tations" 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.³⁰ 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 and less supportable as they decrease in number. 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.³¹ 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 Negro status, and racial disorders, would support an expectational thesis.³²

³⁰ Except for southern communities, the 1950 Census of Population presents characteristics of the nonwhite population only for places with 50,000 or more nonwhite inhabitants. By comparison, in the 1960 Census these data are available for communities with 1,000 or more nonwhites.

³¹ 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).

³² A positive relationship between relative Negro status in a community and racial violence would

Political Structure. Lieberman 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 Lieberman and Silverman; we added the dichotomous variables, partisan versus nonpartisan election, and mayor-council form of city government versus other type. 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.

also be consistent with a very different explanation. If racial unrest were a result of interracial 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, Lieberman 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 of the relative deprivation measures, the variable community percent Negro, which has been used as an indicator of interracial competition (Blalock, 1957; Matthews and Prothro, 1967:186), is included with this cluster of variables.

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 interracial with many instances of substantial aggression by whites against Negroes. During the present decade, however, racial disturbances have been uniquely situations of Negro protest. 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 invariably the Negro who emerges defeated and frustrated from the competition.

TABLE 5. CORRELATIONS BETWEEN NUMBER OF DISORDERS AND INDICATORS OF COMMUNITY STRUCTURE

Community Attribute	(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 32 regarding inclusion of this variable with the Indicators of Relative Deprivation.^d Source: U.S. Census of Population, 1960.^e Source: The Municipal Yearbook, 1965.

7. COMPARISON OF THE EXPLANATIONS

It is argued in the Appendix that a regression analysis, in which the number of disorders in a city is related to community characteristics, is both consistent with the previous Poisson methodology and an approximation to examining the λ -values themselves in terms of community characteristics. Consequently, this procedure is used for assessing the merits of the alternative explanations.³³

³³ Data on nonwhite population characteristics are published in the 1960 Census of Population for

Column (1) of Table 5 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. Evaluating the over-all pattern exhibited by these correlations, it is evident that racial disorders are more likely to occur where the level of life

413 communities. This value therefore constitutes the number of observations in the reported regressions.

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.

Turning to a consideration of the alternative explanations, support exists only for the expectational theses. 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 32). However, we will indicate momentarily that neither of these explanations for the location of disorders is correct.

Two additional variables, indicators of geographic region and Negro population size, play an essential role in the following discussion. A dummy term for South was included in recognition of the very different traditions of race relations in the South and non-South, which are only partially captured by the other indicators of Negro status. The dummy term is negatively correlated with number of disorders ($r = -.198$).

More crucial to the analysis is the numerical size of the Negro population in a city. Given the protest character of racial disorders in the 1960's, this variable was expected to be an important consideration as it relates directly to the ability of the Negro community to mobilize a disorder, and also to the number of incidents occur-

ring in a ghetto which might precipitate a disturbance. Consistent with this expectation, Negro population size exhibits the largest zero-order correlation in Table 5 ($r = .586$).

Moreover, this variable may play an even more central role. If the disorders were primarily instances of Negro response to frustrations that are geographically diffuse in their impact, rather than to local community conditions, then number of Negroes should be the *only* community variable related to the location of disorders. Indeed, there is reason to suggest that much of the frustration to which Negroes have been subject during the 1960's has originated outside the community. In this decade, the leadership in pressing for the elimination of racial barriers in employment and housing has come primarily from the federal government. These activities are salient to the residents of every ghetto, and may have sensitized them to this level of governments so that they now base their expectations regarding future improvements in status largely on the cues coming from Washington. In this circumstance, federal actions which are vacillatory or otherwise insensitive to Negro concerns are likely to provoke frustrations in Negro individuals *irrespective of where they reside*. Reinforcing this effect, highlights from Congressional debates on issues, such as whether to fund a rat control program, are made visible through television in every ghetto.

The contention that Negro population size would be the only community characteristic related to disorder outbreaks (were these events reactions to frustrations originating outside the community) derives from an alternate formulation of Tomlinson's thesis. Here we interpret his statement that Negroes in all cities have come to share in a riot ideology (1968:29) to mean that an individual's proclivity to riot is not influenced by community conditions, and we further assume that characteristics such as age and sex, which are known to affect participation (Campbell and Schuman, 1968:56), are distributed in substantially the same way in every community. Conceptualized in this manner, disorder-proneness is inherently a personal attribute, a response to factors which are exogenous to the com-

munity but visible in all ghettos. The community propensity, in this formulation, is an aggregate of the individual values and would therefore reflect the numerical size of the Negro population.³⁴

In light of these comments, the appropriate methodological approach for investigating the relation between community structure and racial disturbance would be to control for the effects of nonwhite population size rather than compare cities with vastly different potentials for mounting a disorder. Column (2) of Table 5 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 South³⁵).

³⁴ Although this formulation is couched in terms of the individual, it is also consistent with a social explanation. In addition to measuring the availability of potential participants, numerical size may be a proxy for organizational characteristics of the ghetto which covary with Negro population and, in turn, influence disorder-proneness. As examples, residential segregation, the density of community organizations, black consciousness and militancy are likely to vary 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 contribution from these factors.

³⁵ In this region, past experiences of Negroes probably operate to reduce their expectations re-

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 nonwhite 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 5). Moreover, a significant correlation does not necessarily imply high explanatory ability for the variable. Table 6 makes this point evident.

Column (1) of Table 6 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% of the variation. By comparison, the three social disorganization measures plus South explain 6.0% of the variation, and all clusters except nonwhite population (17 variables) explain 42.0% 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.

garding the likelihood of rapid improvement in racial matters or in their economic situation. Moreover, a tradition of intimidation and repression may restrain individuals from permitting their frustrations to be translated into hostile outbursts.

TABLE 6. PERCENT 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 Popu- lation 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 5 for a description of the variables included in each cluster.

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% of 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 conceptually prior variable has been removed, the other community characteristics account for so little. Column (3) presents the amount of independent variation in each cluster after partialing 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%.

The conclusion from this analysis is that the racial disturbances of the 1960's were not responses to conditions in the local community. Disorder-prone cities do differ from their less traumatized neighbors in many significant respects. Racial violence is more likely where Negroes are better situated in occupational status, in education and income, and where the rate of population growth is small. However, these conditions have little to do with a community being prone to racial disorder, and are instead the incidental characteristics of cities with large Negro populations. They may have influenced the migration patterns of Negroes in earlier decades, and in that sense contributed to disorder-proneness, but they have no direct bearing on the location of the 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 disorder-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 disorder-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 disturbances. 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, upon controlling for Negro population, the explanation failed to account for the distribution of disorders. More generally, we conclude that differences in disorder-proneness among communities cannot be explained in terms of variations in the objective situation of the Negro.

Instead, an explanation which identifies disorder-proneness as an attribute of the individual seems better able to account for the findings. Rephrasing Tomlinson (1968), I would argue that although different communities are not equally prone to racial disturbance, the susceptibility of an individual Negro to participating in a disorder does not depend upon the structural characteristics of the community in which he resides. As for the community propensity, it is an aggregate of the individual values—the larger the Negro population, the greater the likelihood of a disorder. Little else appears to matter.

There are social and political realities which account for this anomaly, 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 of 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 meager 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 boundaries, the impact of television has fostered a consciousness of identity which now 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 very factors in the early decades of this century which accounts for the relationship between disorders and the local situation of Negroes reported by Lieberman and Silverman (1965).³⁶

³⁶ In a reanalysis of the Lieberman and Silverman data, Milton Bloombaum (1968) concludes that multidimensional scalogram analysis separates the pre-World War II riot cities more distinctly from their controls than it does the post-War riot cities. While Bloombaum indicates that this time difference cannot be distinguished from a possible regional effect (the post-War disorders were largely in Southern cities, the pre-War riots were in the North), the empirical finding and the time effect explanation are consistent with our contention.

APPENDIX

DECOMPOSING THE HETEROGENEITY IN DISORDER-PRONENESS

For the purpose of relating disorder-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 analytic procedure consists of subdividing the distribution of cities according to their values on different explanatory variables, with the objective of constructing categories which have the following properties:

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

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

A categorization of the cities with these properties would permit the heterogeneity in disorder-proneness to be explained in a manner analogous to an analysis of variance scheme. By reducing the within-category variation, cities which are grouped in the same cell will necessarily have similar propensities. As a result, the simple Poisson process (which formally 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 (3), when the simple Poisson assumptions are satisfied, $\text{var}(k) = E(\lambda)$, 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 disorder-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. The strategy, therefore, is to find variables which provide an adequate decomposition of the cities, in the sense of

reducing the within-category variation and increasing the range of the category means.

To illustrate, we consider the roles of two demographic variables—community percent Negro and the numerical size of the Negro population. Table 7 presents categorizations of the cities in terms of these two 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 (3) using the mean and variance of k . Panel B presents analogous statistics with the communities grouped by numerical size of the nonwhite population.

Applying criteria (1) and (2) to these categorizations, nonwhite population size (Panel B) evidently produces the more satisfactory decomposition. 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 inter-

preted 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 1961–1968 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 with largest Negro populations, the heterogeneity among cities in disorder-proneness is substantially reduced when they are grouped by nonwhite population size. For cities with nonwhite populations 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. The large variance results from the enormous range in Negro population among cities in this category—40,000 to 1.2 million—and could be reduced by subdividing the category.

By comparison, percent nonwhite is far less effective for grouping cities to reduce the heterogeneity in the dependent variable. For values greater than 8.3%, disorder-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, using this ex-

TABLE 7. DECOMPOSITION OF $F(\lambda)$, CITIES GROUPED BY PERCENT NONWHITE AND BY NONWHITE POPULATION SIZE

Panel A. Category Means and Variances, Cities Grouped by Percent Nonwhite ^a						
Statistic	Percent Nonwhite					All Cities
	0	8.3	15.5	25	58	
$\hat{\lambda}_c$	.162	1.089	1.127	1.133	.507
$\text{var}_c(\lambda)$	.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						
Statistic	Nonwhite Population					All Cities
	0	6,800	14,000	40,000	1.2M	
$\hat{\lambda}_c$	.126	.780	1.027	2.800	.507
$\text{var}_c(\lambda)$	.070	.208	.534	4.588	1.008
n	467	82	74	50	673	

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

planatory variable, we note that the variation in disorder-proneness remains largely "within-category."

This procedure can be extended to a cross-classification of variables; however, it is evident that the simultaneous consideration of a large number of independent variables is not feasible with a tabular format. A regression procedure provides a more efficient approach in this circumstance and, moreover, is consistent with the previous Poisson methodology. Until this point, the analysis has consisted of assigning the cities to a small number of categories, and then using the cell means (\bar{k}_c) to estimate the respective category disorder-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 disorders in a city to estimate its category value. For this reason, the number of racial disturbances during 1961-1968 is taken as the dependent variable in the regressions against city characteristics.

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