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ABSTRACT

This study attempts to ascertain whether particular structural arrangements and demographic features of a community made for especially severe disturbances during the 1960's. Preliminary to addressing this question, consideration is given to the manner of measuring severity and to the volatile components of this phenomenon. With respect to the latter, it is found that (1) disorder severity declined as a function of the number of prior outbreaks in a city, and (2) there is evidence for a temporal effect, with the post-Martin Luther King-assassination disturbances having been unusually destructive. Regarding the stable (community) determinants of disorder severity, only Negro population size and a dummy term for South were found to be related to severity. Net of these variables, various indicators of Negro disadvantage in a community failed to reveal significant relations with severity. This result is interpreted as further evidence for the distinctly national character of the disturbances in the 1960's.

STRUCTURAL CHARACTERISTICS OF CITIES AND THE SEVERITY OF RACIAL DISORDERS

The issue of disorder severity is a separate matter conceptually from accounting for the locations of disturbances. This distinction was recognized by Wanderer (1969) although the particular procedures he employed to analyze the severity of racial incidents which took place during 1967 have been criticized (Spilerman 1970a). The rationale for distinguishing between the determinants of disorder location and the determinants of severity can be illustrated most compellingly with respect to the organization and training of social control forces: It may be impossible for the police to react with sufficient alacrity to prevent the occurrence of most "spontaneous"[1] collective outbursts (especially if an inclusive definition of disorder requiring a low level of violence is used); nevertheless, their manner of response may be an important determinant of the intensity to which an incident will escalate.[2]

A plausible argument can also be made to the effect that the variation across communities in severity of collective aggression will reflect differences among them in the degree of discontent experienced by their inhabitants. With respect to racial turmoil in the 1960's, it has been reported that the disturbance locations were unrelated to a number of objective indicators of Negro social and economic status and their living conditions in a city (Spilerman 1970b; 1971). This lack of significance of the community characteristics was interpreted as evidence for a thesis that the frustrations which provoked ghetto residents during this period were nationwide in impact, and not rooted in circumstances peculiar to the stricken communities. Instead, an explanation was proposed which emphasized the wide availability of television and the role of network news programs in

exposing Negroes uniformly to stimuli of a frustrating nature, and in propagating in all cities the same role models regarding how some ghetto residents were responding to the deprivations endemic to Negro life in America.

However, an assessment that community conditions were altogether irrelevant to the riot process would constitute an overinterpretation of the empirical findings since the preceding studies examined only the determinants of disorder location (i.e., outbreak frequency in a city). It may still be the case that the frustrations of Negroes which derive from their local situations are salient to other aspects of the disturbance process. In this regard, there is certainly reason to expect community differences to exist in the level of Negro discontent. The conditions under which they live vary enormously among cities, in absolute terms and relative to white circumstance. For instance, in 1960, the range in median Negro income was from $1,880 to $9,079; relative to median white income the range was .30 to 1.19.[3] Disparities of such magnitude must mean that an individual's life chances, and a social group's ability to organize and effectively promote its collective interests, are conditioned in dramatically different ways from one community to the next. It is not unreasonable to expect corresponding variations to be present in the extent of frustration that is experienced by Negro residents in these cities.

There is precedent for suggesting that the frustrations may come to be expressed in the intensity of a release, if not in the frequency of outbreak. Evidence from laboratory studies underscores the importance of the intensity variable. For example, Berkowitz (1965) reports that angered subjects sent shocks of greater frequency and duration to stooges; Baron (1971) observed that anger arousal motivated shocks of high severity; and Zimbardo (1969) describes a laboratory study in which aggression was

expressed in shock duration, even though frequency was permitted to vary. With respect to collective behavior in natural settings, it has been also suggested that "the fury of the destructive reaction will vary with the indignity of the disappointment" (Milgram and Toch [1969:549] paraphrasing Dollard, et. al. [1939]).

The argument as to why frustration may come to be expressed in severity of aggression, rather than in frequency, can be made in the following way. In our society acts of collective violence are inhibited by deep-rooted mores as well as by a fear of apprehension and punishment. In fact, despite the large number of racial disturbances during the 1960's, a disorder was actually a rare event in any given community. While some 170 cities (from among the 673 with 1960 populations exceeding 25,000) did experience some racial turmoil during 1961-68, fewer than ten witnessed more than five disturbances during that eight-year interval.[4] Viewed from this perspective, even during a decade of great urban unrest the inhibitions which normally deter hostile outbursts appear to have been overcome only infrequently in a particular community.

Breaching the barriers against collective violence may require a precipitant of immense significance. Indeed, 168 of the 341 racial disturbances can be associated with one of two extraordinary events: the massive Newark riot of 1967 (which received extensive television coverage) or the assassination of Martin Luther King. Once the inhibitions against violence have been overcome, however, it is conceivable that the severity of the resulting outburst will be conditioned by the frustrations which have accumulated among Negroes in the community from years of deprivation and powerlessness. As Neil J. Smelser (1963:259) has observed, "Once hostile outbursts begin...they become a <u>sign</u> that a fissure has opened in

the social order, and that the situation is now structurally conducive for the expression of hostility." With regard to disturbances during the 1960's, evidence in support of a relation between community-based deprivations and riot severity has been reported by Downes (1968) and Morgan and Clark (1973). The latter (1973:622) are most emphatic in their conclusion: "Cities with a higher grievance level among blacks...had higher rates of disorder participation and hence more severe disorders."

Two additional factors warrant consideration. First, apart from the relevance of the social and economic organization of a community, there is a possibility that an outbreak of violence will alter the expected intensity of a subsequent disorder in the same city. The most reasonable conjecture is that later disturbances would be less severe since the initial event would have stimulated police preparation and training in crowd control procedures.[5] Second, superimposed upon the foregoing processes, a time trend may exist in disorder severity. For instance, the disturbances subsequent to the assassination of Martin Luther King may have been unusually destructive and violent because of the intensity of bereavement among Negroes. Or, just as the police in a city which has experienced a disorder may be motivated to routinize their crowd control techniques, these tactics might become diffused more widely as other communities recognize that they may not be immune to racial turmoil. Thus, with the passage of time, the severity of even a <u>first</u> racial incident in a city might decline.

The above comments constitute a rationale for investigating the variation in disorder severity, and for doing so with reference to several categories of potential determinants: the social and economic situation of Negroes in a community, the preparation by social control forces, the prior disturbance history of the community, and the location in time of

the incident. In the following section, preliminary to examining the correlates of severity for the disorders of the 1960's, we discuss the specification and measurement of this construct.

MEASUREMENT OF DISORDER SEVERITY

The measurement of disorder severity raises several conceptual and methodological issues. One matter concerns the question of dimensionality. Wanderer (1968), Downes (1970), and Morgan and Clark (1973) have all treated severity as a unidimensional concept. Indeed, Wanderer reports that the 75 incidents which he analyzed form an eight-category Guttman scale.[6] In our considerably more extensive data set (322 incidents) information on aspects of disorder severity is not systematically available. However, the few inter-correlations which can be computed among the component indicators are large, and suggest that a unidimensionality assumption is not unreasonable.[7] We will proceed here under this assumption; additional evidence to support unidimensionality will be presented in a later section.

A second issue concerns specification of the severity scale categories and selection of items appropriate to the construct. On this matter, we have three disagreements with Wanderer concerning strategy in scale construction: (1) The items he used are all qualitative and hence insensitive to the magnitude of an activity type. For instance, two successive items in his scale are "all of the above plus looting" and "all of the above plus sniping." An incident of brief duration, with a minor amount of looting and one or two snipers (who cause no injuries) would be scaled by Wanderer as more severe than a disorder lacking a sniper but having thousands of looters and vandals, engaged in running battles with the police for many hours, and resulting in numerous injuries and arrests. Intuitively, we

prefer to consider the latter a more severe disturbance. (2) Wanderer's scale omits items which we believe should be major components of a disorder severity instrument: crowd size, number arrested, and number injured. (3) Two of his categories--"called national guard" and "called state police"--confound an organizational response to rioting with the intensity of the stimulus. An implication of this latter point will be considered at the end of the present section.

Using data much the same as ours, Downes (1968; 1970) constructed a four-category ordinal scale which incorporates quantitative information on the extent of several kinds of riot activities.[8] We chose to use a somewhat more elaborate version of Downes' scale (Table 1); the main difference being that our instrument specifies numerical bounds at each scale level for crowd size, number of arrests, and number of injuries, to supplement the descriptive information pertaining to severity. The bounds were specified so as to overlap one another because the component aspects of severity are not perfectly correlated. Some disturbances have large crowds but few injuries while other incidents with relatively few participants may be exceedingly sanguinary and result in a great many injuries. In assessing severity, the coders were instructed to use the bounds as guides, in conjunction with the descriptive materials on a disorder, rather than code in an inflexible manner.

Table 1 about here

A final issue concerns measurement properties of the severity scale. Whereas Downes utilized ordinal ranks in his computations, we chose to assign interval scores to the categories, in recognition of the fact that our knowledge about the scale levels exceeds rank order information. For instance, it was apparent to the coders that the disorders at each successively higher rank were, on average, considerably more severe than ones

in the preceding category. Interval values were assigned to the rank differences in the following manner: After classifying all incidents, the coders were instructed to consider the disparity between category 1 and category 0 disorders as equal to one unit of intensity, and then to estimate the severity difference between category 2 and category 0 disorders, and between category 3 and category 0 disorders. The values which they assigned separately were very close, and averaged to the scale scores 0, 1, 4, 12, corresponding to the ranks, 0, 1, 2, 3. These interval values define the dependent variable in the main analyses to be reported in this paper.

Our primary data sources were Lemberg Center (1967; 1968) and the New York Times Index. Newspaper accounts and the Civil Disorder Chronology (Congressional Quarterly 1967) were consulted in reference to the pre-1967 disturbances, but information concerning those events was too sketchy to permit reliable classification on severity. The incidents analyzed in this study, therefore, are limited to the period 1967-68. Three hundred and twenty-two events satisfied the minimal criteria of violence necessary to be considered as disorders (Spilerman 1970, p. 630), and were used in the analysis.[9]

Following the instructions outlined above, two coders, working independently, classified all incidents. Where information on some aspect of severity was missing[10] they were instructed to assign the incident to a rank category on the basis of available data. Agreement between the coders was obtained with respect to 96 percent of the disorders. In every instance of disagreement a single rank difference was involved, and the matter was resolved by averaging the two values.

To validate the resulting scale as a severity instrument, the component variables (number of arrests, number of injuries, and crowd size), the three-category severity classification employed in the Kerner Report (National Advisory Commission 1968, p. 65) in conjunction with the 1967 disorders, and the composite indices described in this paper were inter-correlated using a pairwise-present calculation. The results are presented in Table 2 and reveal a substantial correspondence between our indices and the other measures of severity.

Table 2 about here

Inclusion of organizational response items in the severity scale. In the preceding section we suggested that the inclusion of items such as "called state police" and "called national guard" in a severity scale would confound an organizational response to a disturbance with the intensity of the stimulus. This is an undesirable situation because the kind of external assistance which is provided to a city may be a function of its structure and demography, in addition to the severity of the incident. This contention is elaborated upon here.

The particular scale items cited above are among those used by Wanderer (1968:197) to define severity levels. He considered "called national guard" (item 6 in footnote 6) as indicating greater disorder severity than "called state police" (item 5). An alternate possibility, however, is that communities with particular structural and demographic features will tend to specialize in obtaining one or another form of outside assistance. In particular, for a given level of severity (as measured by the extent of violence), we suggest that large communities will be less likely than small places to receive state police aid. The reasons for this assertion are the following: (1) Because of their sizable police forces large cities are less

likely to require external assistance of any sort. (2) In many states the state police have a primarily rural and small town jurisdiction. (3) Considering the amount of assistance that would be necessary to effectively reinforce local police authorities in a large community when they cannot quell a disturbance, a substantial redeployment of state troopers, from many jurisdictions, would be required to provide sufficient manpower. For these reasons, when external assistance is requested by large cities we expect the national guard to be mobilized, rather than the state police being called.

An analogous difficulty regarding the inclusion of organizational response items in a severity scale involves the possibility of anticipatory deployment of external personnel. Following the assassination of Martin Luther King, for example, national guard troops were dispatched to many cities in the expectation of violence and turmoil. Consequently, it is possible that the item "called national guard," rather than having disorder severity as a pure stimulus, is contaminated instead by other considerations.[11]

To convey more concretely the import of the foregoing objections to the inclusion of organizational response items in a severity scale, dummy variables for "called national guard" and "called state police" were regressed against our measure of disorder severity and against terms for city size, region, and time period.[12] The entries in column (1) of Table 3 are unstandardized regression coefficients corresponding to the dependent variable "called state police." The significant negative coefficient for city size indicates that, holding severity constant, large cities were, indeed, less likely to obtain assistance from the state police than were small communities. Use of the item "called state police" to define a severity level would therefore make small communities appear to have had more serious outbursts,

and large cities less serious disorders, than is suggested by descriptive information on the amount of violence, and by quantitative data on crowd size, number of arrests, and number of injuries.

Table 3 about here

In the national guard equation (column 2), the significant coefficient corresponding to the post-Martin Luther King assassination period indicates that inclusion of this organizational response item in a severity scale would make the disturbances following the murder appear more turbulent than is warranted on the basis of our severity index. This finding supports the anticipatory deployment contention. With respect to the term for South, its significance suggests that, holding the extent of violence and other factors constant, a southern state was more likely than a northern one to provide this manner of law enforcement assistance to locales contending with hostile outbursts. In summary, we find that the social control items contained in Wanderer's severity scale are intimately related to other community characteristics. If used to measure severity they will provide an inaccurate description of the amount of violence and destruction that actually transpired.

REINFORCEMENT EFFECTS AND TIME TREND

The variables in this study which bear greatest sociological significance are the ones which refer to structural and demographic features of a community. The findings with respect to these factors can inform us about how the severity of hostile outbursts is conditioned by the way our cities are organized and governed, and by the pervasiveness of the deprivations to which Negro residents are exposed. Most of the community characteristics that we shall examine change only slowly during a brief

time interval such as the period covered by this study (1967-68); as a result, we will treat them as constant in time and employ cross-sectional procedures. What we shall be investigating, then, is the presence of a severity value that is community specific and stable over time; both properties deriving from its being a function of community demography and social organization.

Before addressing this issue we discuss some volatile aspects of a community's severity value. This matter is of importance because we wish to acquire a comprehensive understanding of the determinants of severity, and also because controls will be necessary for the responsible factors in order to obtain unbiased estimates of the community effects. One possible source of volatility relates to the presence of multiple disturbances in a city during the two year interval; often they were at different levels of severity. While this may be simply a consequence of random variation about a community's characteristic value, it could also reflect the influence of systematic factors. In particular, as we suggested in the introduction, a reinforcement process might operate whereby an outbreak of violence alters the expected severity of a subsequent disorder in the same city. This would happen, for instance, if the police were to increase their preparation in riot control procedures following an initial outburst (thereby lowering the expected severity of later disorders) or if insensitive police actions during the first incident were to leave a residue of bitterness and hostility in the black community (in which case the intensity of subsequent violence might be raised). In either case, the expected severity of a disturbance would be a function of the history of prior racial turmoil in the city. A second potential source of volatility relates to the presence of a time trend. Outbreaks of exceptionally

severe disorders following the assassination of Martin Luther King would constitute an example of such temporal variation.

Evidence for both contentions can be found in Table 4. The entries in column (1) report mean severity rank by time period[13] for the first disturbance in a community; in column (2) analogous figures are presented for disturbances subsequent to the first one. These values suggest that disorder severity was a relatively stable phenomenon until the assassination of Martin Luther King. In the weeks following his murder the severity of a first disorder in a city declined, while communities with a history of racial turmoil incurred a marked increase in intensity of violence. A reversal of this pattern is apparent in the final time periods: first disorders exhibit a severity increase while later outbreaks in a city show a decline.

Table 4 about here

Although these effects are striking, and suggest the operation of both a time trend and different influences upon first and later disorders in a city, the responsible mechanisms are not discernible from an inspection of Table 4. In order to unravel the determinants of the volatility in disorder severity we resort to a regression formulation in which the processes outlined above are taken into account, and controls are also incorporated for community differences in disorder-proneness. Controls for the latter factor are necessary because cities with different characteristic severity values may differ as well in their proneness to incur disturbances, and this feature may be confounded with the aforementioned processes. In particular, communities with high severity potentials may tend to experience many disorders and therefore would probably undergo a first disturbance in an early time period. This situation would produce

a spurious time trend unless the determinants of disorder-proneness are explicitly controlled.

The dependent variable in the regression was disorder severity, the independent variables being dummy terms for time period, number of prior disorders in the city, South, and a continuous term for Negro population size. The latter two variables were included because they have been cited as major determinants of community disorder-proneness (Spilerman 1970b). One further point regarding model specification deserves comment. Many American cities incurred multiple disturbances during 1967-68. Since each of the incidents constitutes an observation in our analysis there is a possibility that the residuals from the regression will be serially correlated. This would occur, for example, if certain community characteristics that are determinants of severity were omitted from the regression equation. The error terms for the disorders in a particular city would tend, then, to be either all high or all low, depending on the effect of the omitted factor. In either case the residuals would be correlated, and this will invalidate tests of hypotheses with respect to the regression coefficients (Kmenta 1971:281). However, an examination of the residuals (Appendix I) failed to reveal autocorrelated errors, and ordinary least squares was used.

The results reported in Table 5 provide evidence for each of the preceding contentions regarding the determinants of volatility in disorder severity. With respect to a temporal trend, the entries in column (1) reveal that the post-Martin Luther King-assassination disturbances in April 1968 were unusually severe, net of the other variables in the equation. On our 12 unit scale a disturbance at that point in time tended to be approximately one unit more severe than one in the reference interval (t_1). This effect appears to have spilled over into the early summer months of 1968 although

owing, possibly, to the few incidents in that period the coefficient for t_4 is not statistically significant.

Table 5 about here

The two community characteristics that were included in the regression because of their known influence on disorder frequency (Negro population size and a dummy term for South) have effects which are comparable to the ones reported for them in the disorder-proneness study (Spilerman 1970b:643). Both severity and frequency vary directly with Negro population size (a large population provides the human resources for many disturbances and for severe ones). Also, severity and frequency were both substantially lower in the South; according to the specification of equation (1) the average severity of a disturbance in this region was more than one scale unit below that of a non-southern incident, net of the other factors. In the disorder-proneness study we speculated that the regional difference might reflect lower expectations on the part of southern Negroes regarding the likely rate of improvement in their conditions (and, hence, less frustration from observing the actual rate of progress), and a greater fear of repression and retribution. This same explanation would account for disorders being less severe in the South since the salient point, again, is that there would be fewer potential riot participants in cities in this region.

Perhaps the most intriguing finding concerns the contribution from prior outbreaks. With the occurrence of each incident the expected severity of a subsequent disorder in the same city declined. It is noteworthy that the contribution from one prior outbreak is not as large as the marginal contribution from two, or three or more, prior outbreaks. I interpret this to mean that participant exhaustion may have had more to do with the decline

in severity than did improved police preparation in response to previous racial turmoil in the city. Under the latter process a first incident should have had the largest effect, with subsequent disorders making progressively smaller marginal contributions to the reduction in severity. However, the regression results reveal the reverse of this pattern, one that is more understandable in terms of an explanation which emphasizes cumulative exhaustion and growing disinterest on the part of potential participants to engaging in yet another disturbance. This interpretation is pure speculation, of course; presumably both processes operated in varying degrees, and a more detailed analysis than we are prepared to undertake here would be necessary to disentangle their separate effects. Nevertheless, irrespective of which interpretation one prefers, the empirical finding is quite clear: severity declined as a function of the number of prior outbreaks in a city. This is a very important point because other investigators (Downes 1968; 1970; Morgan and Clark 1973) have characterized each city by a single severity value, corresponding to its most severe incident.[14]

Because of the tendency of the dummy terms for each higher number of prior disorders to show effects which decrease in an almost linear fashion, we can replace them by a single variable, the number of prior outbreaks in a city. The coefficients for this more concise model are presented in column (3) of Table 5 and differ only in minor ways from the parameters of the preceding equation. These variables will be the controls in our investigation of the impact of community structure and demography on disorder severity. Before undertaking that analysis we turn to the question of the robustness of the regression results.

Sensitivity analysis. While we believe that the severity measure accurately depicts the magnitude of violence and destruction that transpired

in particular disorders, it is nonetheless true that other researchers, employing alternative methods to assess severity, might have constructed different indices. It behooves us, therefore, to ascertain whether the results we have reported are an artifact of the particular coding scheme that was used or whether they are robust with regard to specification of the severity index. We address this issue in the present section.

One potential source of error relates to our assignment of interval scores to the rank differences. In order to ascertain the sensitivity of the findings to the particular values that were selected, the analysis summarized in Table 5 was repeated with alternate specifications of the rank differences. These results are presented in the form of standardized regression coefficients in columns (1) through (3) of Table 6.[15] Standardized coefficients are reported because they are more suitable for comparisons which involve different dependent variables than are unstandardized coefficients; the magnitude of the latter will vary with the choice of metric for the dependent variable.

Table 6 about here

With respect to number of prior disorders, Negro population size, and South, the results appear not to be sensitive to the precise specification of the severity measure. In regard to these variables our conclusions would not be changed if a moderately different severity index were substituted for ours. The results for the time period effects, however, do display sensitivity to the values assigned to the rank differences. In particular, if severity were measured on the 0-3 scale we would conclude that the post-Martin Luther King-assassination disorders were not especially violent, while if it were measured on the 0-25 scale we would envision the events of

this period as significantly more violent than we have reported with the 0-12 scale. While we believe that our instrument provides a more accurate representation of the severity levels than either of the alternatives, the period effects should be seen as less well established than the other findings.

A second potential source of error relates to classification of the individual disturbances into severity categories, a task which was performed in accordance with the criteria described in Table 1. For a portion of the incidents we have available quantitative information on facets of severity--crowd size, number of arrests, number of injuries--and were able to replicate the analysis using these components as dependent variables. The results are presented in columns (4) through (6) of Table 5, and are consistent with the findings obtained with our composite index. Number of prior disturbances and the two determinants of disorder-proneness (Negro population size and South) show effects that are very similar to the ones already reported for them. With respect to the time period terms, t_3 is significant in two of the three equations and t_4 is significant in one equation. This provides supporting evidence for the contention that the post-assassination disorders were more severe than incidents in the other time periods. It should also be noted that the fact that these results parallel the ones obtained with the composite index means that the unidimensional conceptualization of severity is not obscuring relationships between components of this construct and other factors.

Finally, a canonical correlation model was estimated taking as observations those disturbances for which we have data on all three severity components. The substantive perspective underlying use of this model here involves treating severity as an unobserved construct for which we have

available three indicators: crowd size, number of arrests, and number of injuries. This formulation therefore utilizes information on the three severity facets simultaneously in forming the "dependent variable."[16] It is unlike our composite measure in that the weights assigned to the components combine them in a linear fashion, in that the weights are estimated by making use of their relationships to the "independent variables," and in that non-quantitative information on the incidents is not utilized. Despite these differences the coefficients of the independent variables in the canonical model are quite consistent with the preceding findings.[17] Although we lack significance tests for the individual variates, in sign and in magnitude they are similar to the coefficients obtained with the other formulations. We conclude that the results reported in Table 5 are not ideosyncratic of the severity index which was used. Under an assortment of alternative specifications of severity and under different analytic procedures the same substantive assessment would have been reached.

COMMUNITY-BASED DEPRIVATIONS AND DISORDER SEVERITY

In the introductory section we presented a rationale for investigating the impact of the conditions under which Negroes live in a community on the severity of its disorders. We indicated that while the kinds of discontent which derive from community-based deprivations have not been found to be related to the frequency of hostile outbursts, there are theoretical considerations and results from other empirical studies (Wanderer 1968; Downes 1968; 1970; Morgan and Clark 1973) which suggest that this may not be the case with disorder severity; that once a disturbance has begun, the frustrations which have accumulated among Negroes as a result of their circumstance in the community may well be expressed in the intensity of the aggression.

To the extent that the frustrations which provoked Negroes to riot during the 1960's were a consequence of local deprivations, we would expect the variation across cities in disorder severity to correspond to the variation in the indicators of the relevant deprivations, once other salient factors have been controlled. This raises the question of which conditions were responsible for the discontent expressed in the rioting. The presence of city differences in important determinants of Negro well-being is not a sufficient reason for concluding that a corresponding variation will exist in the frustration level of inhabitants of different ghettos. Many potential sources of discontent are only that--potential sources--until attention is called to them and they are invested with symbolic import and racial significance. (Examples are Negro-white disparities in various institutional areas, which form a basis for reference group explanations of frustration.) There are other community characteristics whose values in different cities are likely to induce corresponding variations in the level of discontent, irrespective of whether or not they become foci of attention. For instance, there probably is greater discontent where median Negro income is low than where it is high, because of the enormous importance of this factor for access to a variety of desirable life styles. However, this does not mean that the greater frustration in poor ghettos will, necessarily, be articulated in severity of rioting; the disorders of the 1960's may have been reactions to entirely different provocations than community conditions.

Because we are not prepared to assert which inequities were especially galling to Negroes, or whether they were oriented in this period to a particular reference group, our strategy will be to postulate a number of plausible ways by which frustration may derive from community conditions

and then ascertain the relation between measures of the relevant factors and disorder severity. A detailed discussion of this procedure has been presented elsewhere (Spilerman 1970b; 639-641); consequently, the argument is only summarized here and the reader is referred to the earlier report for details. In essence, we have selected community characteristics which can serve as indicators for a social disorganization explanation, for reference group explanations, and for a thesis which associates the severity of rioting with an unresponsive municipal political structure.

Social disorganization. According to this perspective on the causes of collective aggression, individuals who are weakly integrated into their community, in the sense of having few associational ties or little personal identification with it, are less encumbered by the constraints which would dissuade others from participating in a destructive outburst. One formulation of this thesis refers to the disorienting effects of rapid population change. A locale which has experienced a substantial influx of new residents would have acquired many persons who are unacquainted with the institutionalized procedures for seeking redress of grievances; at the same time, these individuals would have little investment in solving problems in a manner which avoids rancor and conflict in the community (Coleman 1957:20-21). Frustration is not the animus here, rather it is the absence of social links which normally permits informal control to be exercised and prevents disputes from polarizing and degenerating into hostility and violence. A second version of the social disorganization thesis stresses the negative association with community that is likely to characterize the attitudes of residents in the worst ghettos because of their continual exposure to crime, filth, and dilapidated housing. As indicators of the first formulation we used the census variables percent change in total population, and percent change in non-white population. As indicators of the second formulation we employed

the variables percent of non-whites residing in dwellings constructed before 1950, and percent of non-whites living in housing with substandard plumbing.

Political structure. During periods of rapid change in the status of a minority, such as occurred for Negroes during the 1960's, issues frequently arise which require the representation of its views in the municipal government. Also, if bitter disputes involving the group are to be resolved without confrontation and violence there is a need for city officials to be oriented toward compromise and accommodation. While we lack performance measures on how racial disputes were processed in the many cities which experienced disorders during 1967-68, there is evidence that certain electoral procedures and political structures make for greater responsiveness to the sensitivities of diverse constituents, and we have measures of the presence of these arrangements. In particular, Lieberson and Silverman (1965) and Wilson (1960:25-27) have argued that a municipal government will be more representative of community composition when council members are elected from established districts rather than at-large, and when the council districts are small; the rationale being that opportunity is thereby increased for a numerically small but geographically concentrated group to elect its own members. It has also been suggested (Coleman 1957:14-16); Alford and Scoble 1965) that a mayor-council structure and partisan elections will enhance governmental responsiveness to the diverse and conflicting interests of a socially heterogeneous community. In our analysis we included dummy variables for presence of non-partisan elections and for mayor-council government, and continuous variables for population per councilman and proportion of the city council elected at-large.

Deprivation explanations. These approaches to explaining frustration may be classified according to whether or not the presence of a reference group is postulated. Absolute deprivation explanations attribute the inter-city variation in the level of Negro discontent to community differences in social and economic opportunity for ghetto residents. The presumption here is that where many persons earn low incomes or are employed at unsatisfying tasks, discontent will be more widespread. Since it focuses upon the economically most disadvantaged population segment in a community this is an instance of an underclass explanation of the sources of violence and aggression (Downes 1968:513-514). As indicators of the level of absolute deprivation of Negroes the following variables were used: percent of non-white males employed in low status occupations (household workers, service workers, laborers); the non-white male unemployment rate;[18] non-white median family income; and non-white median education.

Relative deprivation explanations posit the existence of a reference group or an objective standard against which individuals compare their status or their progress. The level of frustration for the underprivileged is usually specified as a function of the size of the gap between the two populations on relevant variables. One possible reference group for Negroes would be other whites in the same community. To measure Negro circumstance relative to this group the absolute deprivation indicators were divided by comparable indices of white living standards. Alternatively, in a highly segregated society such as ours, Negroes may have more familiarity with the stylized version of white family life which is depicted in situation shows on television, and may compare their own circumstance to this portrayal. In the disorder-proneness study (Spilerman 1970b:640) it was argued that the indicators of absolute deprivation provide the appropriate measures for

this relative deprivation thesis. Finally, these same community characteristics may be associated with yet additional explanations, which argue an expectational or a competition thesis.[19] While such complexities are discussed in the preceding report (Spilerman 1970b:639-641), they are not elaborated upon here since the empirical results will not require our ascertaining which of these explanations is to be given greatest credence.

Significance of the community characteristics. In order to ascertain whether disorders tended to be more severe where the objective measures of Negro circumstance in a community indicate greater disadvantage it is necessary to hold constant other major determinants of severity that are correlated with the community factors of interest (Blalock 1964:48). Controls were introduced for the variables listed in column (2) of Table 5. The importance of adjusting for these effects can be motivated in the following way: Because of the Negro revolt character of the disturbances in the 1960's the term for Negro population size measures the availability of participants for large (and severe) disorders; holding this variable constant allows us to compare communities with different sized pools of potential participants. The term for South permits an additive regional adjustment in the relationship between the community variables and disorder severity; it is introduced in recognition of the very different cultural traditions of the regions in race relations.[20] (We have already seen that the regional effect is to depress severity in the South.) In an analogous fashion, the controls for number of previous disturbances and for time period adjust for any obscuring effects arising from the volatile components of disorder severity.

In Table 7 we report zero-order correlations between each of the community characteristics and disorder severity (column 1) and partial correlations (column 2), controlling for the variables in Table 5. While there

are several significant zero-order effects, none remains significant once the control variables are entered into the equation. Again, these results are not an artifact of the particular interval values that were assigned to the severity ranks or of the manner in which the disturbances were categorized. The analysis was replicated taking as dependent variables the two alternate interval assignments (see Table 6) and the three quantitative components of severity (crowd size, number of arrests, number of injuries). This exercise produced results that are virtually identical with the ones reported here.[21]

Table 7 about here

Another approach to evaluating the importance of the explanations which associate disorder severity with Negro deprivation in a community is to assess the joint contribution from each cluster of variables toward accounting for the unexplained variation in the dependent variable. The terms in each cluster listed in Table 7 were therefore entered into a regression equation containing the controls. In no instance did a cluster add as much as two percentage points of explained variation to the 13.4 percent accounted for by the control variables; also, in every case, the added R^2 was insignificant at the .10 level as judged by a conventional F-test. When all four clusters were entered simultaneously (17 variables), 3.5 percentage points were added to the explained proportion of the total variation; again this added R^2 was not significant at the .10 level.

Our analysis therefore indicates that during the 1960's the severity of a disturbance had little basis in community structure or demography. Holding constant the size of the pool of potential participants and several determinants of the volatility in severity, it is not the case that an outbreak of racial violence tended to be more severe where Negro status is

low (in absolute terms or relative to one of several reference groups), where community disorganization is extensive, or where the structure of the municipal government suggests it would be unresponsive to the interests of Negro constituents.[22] Instead, as we have reported in regard to the determinants of disorder-proneness (Spilerman 1970b; 1971), the only stable community characteristics that are related to severity are Negro population size and a contextual term for South.

These results are at variance with the findings by Morgan and Clark (1973) who argue that disorder severity in the mid-1960's was a function of the grievance level of Negroes in a community. In particular, they report that severity was raised by racial inequality in housing conditions, but depressed by inequality in occupational status. We find their analysis less than persuasive[23] for the following reasons: (1) Their assertions are based on only 23 observations. This is a small sample, particularly for establishing a counter-intuitive result such as the occupational effect. (2) They confounded disturbances of very different types. Although their explanatory variables were justified as indicators of Negro grievances in a community, the disorders they analyzed include incidents in which the aggression was perpetrated by whites, as well as instances of Negro aggression (Morgan and Clark 1973, p. 612). Yet it is unclear just what the rationale is behind analyzing the severity of white instigated violence in terms of Negro grievances; at a minimum the relationship with severity would not be the same for the two types of disorders so they should not have been mixed. (3) Morgan and Clark failed to include proper controls for the size of the potential participant pool, which would enable the contribution from the grievance indicators to be ascertained net of city differences in recruitable manpower. They did incorporate a term for city size, but this is not

the correct control for potential participants. Where rioting is principally by Negroes, adjustment should be made for the size of that population group (or its relevant age cohort); where the aggression is by white persons, the size of this group should be controlled.

CONCLUSIONS

In this investigation we have sought to ascertain whether certain structural arrangements and demographic features of a community made for especially severe disturbances during the 1960's. In previous studies (Spilerman 1970b; 1971) we reported that the disturbance locations were unrelated to a number of objective indicators of Negro well-being in a community, and suggested that explanations of the causes of the riots must be sought in frustrations which had nationwide salience, and their areal distribution must be understood in terms of mechanisms which promoted geographic diffuseness in the impact of provocations. Our findings with respect to the determinants of disorder severity underscore that assessment. The severity of a disturbance, as well as its location, appears not to have been contingent upon Negro living conditions or their social or economic status in a community, once region and Negro population size are controlled. Moreover, the effects of the latter variables were much the same in the two studies: large ghetto populations provided the participants for frequent and for severe disturbances; also, net of Negro population size, a southern city tended to have fewer and less violent outbursts, possibly because in that region Negroes held lower expectations regarding improvements in their circumstance and were more fearful of retribution from participating in a racial protest.

Taken together, these studies suggest that despite considerable differences in Negro circumstance from one city to the next, this consideration did not find expression in the two aspects of the disturbance process that we have examined. Although we would not claim that local conditions never influenced disorder-proneness or disorder severity, we do assert the absence of a systematic tendency for either of these facets of the racial turmoil to be associated with the extent of Negro deprivation in a community. This assessment is neither unreasonable nor counter-intuitive when viewed against other characteristics of the disturbances, and against trends which were operative during the period. In particular, the incidents tended to cluster in time following a few dramatic events such as the massive Newark disorder in July 1967 and the assassination of Martin Luther King in April 1968. Also, the entire time interval during which disorders occurred in large numbers was itself concentrated within a few years in the mid-1960's. It is difficult to conceive of the kinds of developments in individual communities which could account for this sudden and practically simultaneous occurrence of hundreds of outbursts.

We can also enumerate trends which functioned to produce a geographically uniform pattern of behavior by Negroes. For one, black consciousness and black solidarity were very real phenomena during the 1960's, having been stimulated by the imaginative and appealing tactics of civil rights activists in desegregating retail establishments in the South, and placing Negroes on the voter rolls. For another, various Civil Rights bills were before Congress during much of the decade; these were salient to Negroes in all communities and would have served to heighten their racial awareness and racial identification. Yet, the factor I would stress as being responsible in a most essential way for the outbreaks having occurred in great

numbers and for community conditions having been irrelevant to the disorder process is the wide availability of television and its network news structure.

By bringing scenes of civil rights marches, demonstrations, and sit-ins into every ghetto, television contributed in a fundamental way to the creation of a black solidarity that would transcend the boundaries of community. Of more immediate relevance to the outbursts, the extensive media coverage accorded to many of the incidents, with the actions of participants depicted in full relief and their anger and exhilaration vividly portrayed, served to familiarize Negroes elsewhere with the details of rioting and with the motivations of rioters. Observing the behavior of persons who face similar deprivations and must contend with the same discriminatory institutions as oneself--in short, individuals with whom the viewer could identify--provided a model of how he, too, might protest the indignities of Negro life. By conveying the intensity and emotion of a confrontation, television, more than the other media, provided an essential mechanism for riot contagion; also, as a result of its national network structure, the provocations which arose in diverse settings were made visible in the ghettos of every city.

The importance of television as a vehicle for the propagation of violent acts is not restricted to racial disorders. There is considerable evidence that skyjackings, prison riots, bomb threats, and aggressive crimes of other sorts have been spread by television and the other mass media.[24] Indeed, a question which will have to concern this nation eventually is the determination of a policy to guide the reporting of destructive and potentially contagious events. However, the treacherous issue of media regulation is not a topic which need concern us here.

APPENDIX I. AUTOCORRELATION IN THE DISTURBANCES

The results reported in Table 5 were estimated under the assumptions of the classical linear regression model. In particular, we require in this model that $E(e_{cj}e_{ci}) = 0$ for $i \neq j$, where e_{cj} is the error term corresponding to the severity of disorder j in city c. However, with time series data it is frequently the case that the residuals from successive observations are correlated. For instance, factors not included in the regression equation that operated to influence the severity of the (i-1)-st incident may have persisted and affected the severity of the i-th incident as well. In this situation, although the least squares estimators of the regression coefficients will be unbiased, the estimators of their variances will not have this property and the conventional tests of hypotheses may lead to incorrect inferences.

The severity data do not permit use of the Durbin-Watson statistic (Kmenta 1971:295) which is commonly employed in ascertaining serial correlation. The difficulty is that our data consist of pooled cross-sectional and time series information and the time series component (sequence of severity values for a city) is very short, never exceeding 9 observations. Moreover, the observations are not at equidistant time points. The Durbin-Watson test cannot be applied to data having these properties, nor is any rigorous procedure known to us. Two, somewhat heuristic, alternative tests were used instead.[25]

Method 1. We assume that the error terms for each city follow a first-order autoregressive scheme:

$$e_{cj} = \rho_c e_{c,j-1} + u_{cj}, \qquad j = 2,\ldots J_c;\ c = 1,\ldots,C \qquad \text{(A-1)}$$

with $E(u_{cj}u_{ci}) = 0$ for $i \neq j$. This specification is frequently made in the econometrics literature and amounts to stating that the correlation

between error terms is greatest for disorders which are adjacent in time. For tractibility we also assume that $\rho_c = \rho$, i.e., the autoregressive process is identical in all cities. Treating (A-1) as a regression equation, the least squares estimator of ρ is given by (Kmenta 1971:512)

$$\hat{\rho} = \frac{\sum_{c=1}^{C} \sum_{j=2}^{J_c} \hat{e}_{cj} \hat{e}_{c,j-1}}{\sum_{c=1}^{C} \sum_{j=2}^{J_c} \hat{e}^2_{c,j-1}} \qquad \text{(A-2)}$$

where $\hat{e}_{cj}$ is the residual from ordinary least squares applied to the main equation (model 1 in Table 5), and J_c equals the number of disorders in city c.

This procedure provided the estimate $\hat{\rho} = -.038$ which, by a conventional t-test, is not significantly different from zero at the .10 level.

Method 2. We again assume that serial correlation of the residuals can be specified by a first order autoregressive scheme (equation A-1) and that $\rho_c = \rho$. Equation (1) of Table 5 may be written in the form

$$y_{cj} = a + b_1 t_{cj} + b_2 PD_{cj} + b_3 C_c + e_{cj} \qquad \text{(A-3)}$$

where t_{cj} denotes a vector of time interval dummies which correspond to the j-th disorder in city c; PD_{cj} denotes a vector of terms for the number of previous disorders; and C_c represents a vector of community characteristics. The subscript j has been suppressed in the last term since the community characteristics are taken to be constant during the time period under consideration.

If equation (A-3) is lagged so that the terms refer to the (j-1)-st disorder in city c, and if this equation is multiplied by ρ and the resulting expression subtracted from (A-3) [see Kmenta (1971:289) for an

example of these calculations], we obtain after simplifying

$$y_{cj} = a(1-\rho) + \rho y_{c,j-1} + b_1 t_{cj} - \rho b_1 t_{c,j-1} + b_2 PD_{cj} - \rho b_2 PD_{c,j-1}$$

$$+ b_3(1-\rho)\, C_c + (e_{cj} - \rho e_{c,j-1}). \qquad \text{(A-4)}$$

The salient features about (A-4) are that ρ appears explicitly as the coefficient of $y_{c,j-1}$, and the residual equals u_{cj} (see A-1) and therefore is serially uncorrelated. Ordinary least squares estimators of the coefficients and their standard errors are asymptotically unbiased and may be used with a large sample to estimate ρ and test its significance. Neglecting one-disorder cities and first disorders in multiple disorder cities, this procedure provided the estimate $\hat{\rho} = -.066$ with a t-value of -0.61, which is not significantly different from zero at the .10 level. Thus, neither approach to assessing the significance of ρ supports the presence of serial correlation.

FOOTNOTES

[1]What is intended by this expression are disturbances which were not outgrowths from planned confrontations such as civil rights demonstrations. The precipitants of "spontaneous" disorders typically were the kinds of incidents that occur frequently in American cities and are usually disposed of in routine fashion (such as an arrest on a ghetto streetcorner) or events of profound significance, concerning which information was propagated by television (the assassination of Martin Luther King). Most of the racial disturbances during the 1960's had such origins.

[2]There is a widespread belief that police tactics and their manner of response to an incipient disturbance can restrain or exacerbate the intensity of the incident. For example, the International Association of Chiefs of Police (1963) recommends the following procedures for controlling hostile outbursts: Extricate the leaders; cordon the area to prevent recruits to the mob from entering; fragment the crowd into small isolated groups; introduce plainclothesmen to inject competing slogans and raise divisive issues (cited in Milgram and Toch (1969, p. 579). Also consult Smelser (1963, pp. 261-268).

[3]Figures are from the 1960 Census of Population (Bureau of the Census 1963) and pertain to the 413 communities in the contiguous United States with total population exceeding 25,000 and Negro population in excess of 1,000.

[4]Figures in this paper which pertain to the location of racial disturbances during the 1960's were computed from the data set used in

4 (cont.) the author's earlier investigations (Spilerman 1970b; 1971). To be included in that data set an incident had to involve at least 30 participants, be characterized by primarily Negro aggression, and be "spontaneous" in origin. For additional details on the definition and categorization of the disturbances see Spilerman (1970b, p. 630).

[5]One police innovation designed to reduce tension and quell turmoil involved the deployment of "youth patrols." In a number of cities, ghetto youth were encouraged to form police auxilaries and patrol their neighborhoods at the onset of rioting. Knopf (1969), in an examination of the effectiveness of these groups in 12 instances of civil disorder, credits them with restraining the level of violence.

[6]Wanderer's severity scale contains the following items: (0) No scale items; (1) Vandalism; (2) All of the above plus interference with firemen; (3) All of the above plus looting; (4) All of the above plus sniping; (5) All of the above plus called state police; (6) All of the above plus called national guard; (7) All of the above plus law officer or civilian killed (Wanderer 1968, pp. 196-197).

[7]The correlations among severity components are reported in Table 2, following the discussion of data characteristics.

[8]Downes's severity scale consists of the following items: (0) Low intensity--rock and bottle throwing, window breaking, fighting; (1) Medium intensity--the above plus some looting and arson; (2) High intensity--the above plus much looting and arson, reports of sniping; (3) Very high intensity--the above plus widespread looting and arson, sniping (Downes 1968, p. 519). Downes included an additional severity category for cities

8 (cont.)
not experiencing a disorder, which he ranked below "low intensity." It was properly (in our opinion) omitted in his second paper (Downes 1970, pp. 355-56).

[9]Because the unit of observation here is the disturbance, not the potential riot site, community characteristics had to be collected only for cities which experienced racial turmoil. This permitted the inclusion of incidents which occurred in cities with population less than 25,000. (These were excluded from the riot location studies because systematic information on small cities is absent from the Alford-Aiken data file, our primary source of data on the independent variables.) Forty-five incidents in small cities are contained in our figure of 322. Due to the large amount of missing data on characteristics of small communities, approximately half of these added disturbances were subsequently eliminated from the main analyses.

[10]Data on number of arrests were available for 294 incidents; information on number of injuries was recorded for 258 disorders. Crowd size was reported less systematically: sometimes a range was specified, in other instances statements were written such as "a crowd estimated to be larger than..." or "a small band of Negro youth." In 209 cases the coders were able to estimate approximate crowd size in terms of the following scale: (0) less than 100 participants; (1) 100-300 participants; (2) 300-700 participants; (3) more than 700 participants. Clearly, the very notion of "participation" is ill defined, and this index should be recognized as subject to much error.

[11]In fairness to Wanderer, it should be noted that the post-Martin Luther King-assassination period was not included in his study, which was restricted to disturbances during 1967.

[12]There is a statistical problem in using a dichotomous dependent variable because the assumption of homoskedasticity is no longer valid. The least squares estimators of the regression coefficients will still be unbiased but their standard errors will be biased and inconsistent. One alternative is to use the two stage method described by Goldberger (1964: 248-50). This procedure was applied here with the first stage predictions restricted to the range .05 to .95 (which has the effect of permitting observations at the end points of the interval to contribute twice the weight of observations at the midpoint). No difference from the substantive findings to be presently reported resulted from this manipulation. Alternate methods such as probit and discriminant analysis are computationally cumbersome and hardly preferable to ordinary least squares (Ashenfelter 1969, quoted in Comay [1971:336]).

[13]The time periods were specified with two considerations in mind: to place roughly equal numbers of cities in each interval, and to group disorders in a way that would heighten the impact of substantive events. T_1 reflects, primarily, the many incidents which followed the major Newark disorder; t_2 is a residual category; t_3 contains the post-Martin Luther King-assassination disorders; t_4 and t_5 divide the summer of 1968 disturbances. The latter two periods are presented separately because of the different effect each has in the regression models (Table 5).

[14]The procedure which Downes followed in assigning severity values to cities is not evident from his articles. It was clarified in an exchange of letters with the author. We point out that despite the tendency to lower severity with each additional disorder, that procedure would

14 (cont.)
associate high severity values with high-multiple disorder cities. A city with many incidents simply has had more opportunity to incur a severe disturbance.

[15]The regression coefficients in column (1) correspond to an assignment of the values 0,1,2,3 to the dependent variable. In column (2) the scale values are the ones which were used in our composite severity index so the entries here are beta coefficients for the second model in Table 5. In column (3) the values 0,1,6,25 were assigned to the severity ranks.

[16]The canonical model does not distinguish between "dependent" and "independent" variables, and simply forms the linear combinations in the two sets of variables which maximizes the correlation between them. For details on the procedure see Van de Geer (1971, Chap. 14). For the purpose of clarity in our substantive argument we retained the traditional labels.

[17]The canonical weights assigned to the severity components (dependent variables) were .68, .20, and .27, corresponding to crowd size, log (arrests), and log(injuries). Because of the greater importance of crowd size in the linear combination, the entries in column (7) of Table 6 were rescaled with reference to that equation.

[18]Although we are examining events which occurred during 1967-68, the community characteristics were drawn largely from the 1960 Census of Population, 1970 census data not having been available at the time this study was undertaken. For most variables this is not a problem; they are stable in the sense that the correlation over cities between their 1967 and 1960 values would be very high. Such stability is least characteristic of the unemployment rates. Unfortunately, unemployment rate information by city,

18 (cont.)
especiallv for Negroes, is not systematically available for intercensial years, so the census values had to be used.

[19]A term for community percent Negro is included in the relative deprivation cluster (Table 7) because this set of variables can be associated with an inter-racial competition thesis. Lieberson and Silverman (1965) suggest that racial violence may be more common where Negro and white males earn proximate incomes, occupy similar occupational statuses and, generally, are interchangeable in the social and economic life of the community. For convenience, the percent Negro variable, which has been also interpreted as an indicator of inter-racial competition (Blalock 1957), is included in this cluster.

[20]We emphasize that the two variables, Negro population size and South, were introduced into the investigation of volatility in disorder severity for a different reason than they are entered here. Formerly, they served as controls for community disorder-proneness. Had other variables been found to be determinants of disorder-proneness, Negro population size and South would still be added at this point for the reasons cited in the text.

[21]In the five replications there were two instances in which a community characteristic remained significant in the presence of the controls. Percent change in non-white population was significant when severity was coded 0-3; non-white median education was significant in the log(arrests) equation. Because significance in each case was barely attained at the level $p < .05$, and because there was no corroborating evidence from other variables in a cluster, these results are discounted in the discussion.

21 (cont.)
In no instance was an entire cluster significant as judged by an F-test on the added R^2.

[22]A parallel analysis was also carried out with a few variables which tap police organization and training. We lacked detailed data on police preparation in riot control tactics in the various cities. However, information on a few police characteristics is reported in the Municipal Yearbook (1966). A presence/absence code was constructed for the following factors: existence of a special riot control unit; existence of a prepared plan for riot control; and use of dogs in riot control.

When these variables were entered subsequent to the controls, all were found to be statistically insignificant. (This finding is not inconsistent with our suggestion that improved police preparation as a result of a disturbance may have had less to do with the severity decline than did participant exhaustion or their lessened interest in further rioting.) Yet, the notion that police tactics and training have little impact on how quickly a disorder is contained is difficult to accept. Because our indicators are few in number and not particularly sensitive to the quality of police preparation, because they relate to police organization in the early 1960's before disorder control became a major issue, and because our primary interest here concerns the relation between severity and objective measures of Negro frustration in a community, these results are mentioned only <u>en passant</u>.

[23]While this is not the place to review Morgan and Clark's analysis of the determinants of disorder frequency, because that topic is intermixed

23 (cont.)
in their paper with the severity study, a few salient comments seem in order: (1) Their attempt to select among explanations according to the magnitudes of correlation coefficients (Morgan and Clark 1973, pp. 616-617) is in error. With N = 42 observations (cities), the zero-order correlations in their Table 2 are not statistically different from one another, nor are the partial correlation coefficients different. In other words, in their data set, there is no basis for prefering one variable to another on statistical grounds. I would also point out that Morgan and Clark neglect to include a term for South which I have reported (1971, p. 429) enhances the relation between disorder frequency and Negro population size. (2) Considering their reason for introducing city population size--to measure the "opportunities...for social contacts that could precipitate a disorder" (Morgan and Clark 1973, p. 616)--they have used the wrong variable. The appropriate measure of disorder-precipitating contacts between whites and Negroes would be $Tp(1-p)$ where T equals city population size, and p equals proportion Negro in the population. (3) The matter of mixing disorders of different types (discussed in the text) is also material to this analysis, particularly in regard to the meaning of the variable Negro population size in instances of white instigated aggression.

[24]For references and additional discussion on this subject see Spilerman (1974).

[25]I wish to acknowledge a very helpful discussion with Art Goldberger on this topic.

TABLE 1. Riot Severity Scale

0 - Low intensity--rock and bottle throwing, some fighting, little property damage. Crowd size < 125; arrests < 15; injuries < 8.
1 - Rock and bottle throwing, fighting, looting, serious property damage, some arson. Crowd size 75-250; arrests 10-30; injuries 5-15.
2 - Substantial violence, looting, arson, and property destruction. Crowd size 200-500; arrests 25-75; injuries 10-40.
3 - High intensity--major violence, bloodshed, and destruction. Crowd size > 400; arrests > 65; injuries > 35.

TABLE 2. Intercorrelations[1] Among Severity Components and the Composite Scales

	Severity (0-12)	Arrests[2]	Injuries[2]	Crowd Size[3]	Kerner Index[4]
Severity Scale (0-3)	.893	.769	.754	.570	.597
Severity Scale (0-12)		.712	.741	.586	.676
Arrests			.684	.533	.489
Injuries				.566	.537
Crowd Size					.444
N[5]	322	294	258	209	145

[1]Pairwise present correlations were calculated.

[2]log (x + 1)

[3]Crowd size was coded 0, 1, 5, 18 in accordance with coder estimates of crowd size at each rank. We point out that these values are close to the ones which Abelson and Tukey (1959:228) recommend when information exceeds rank order knowledge and increasing intervals can be assumed.

[4]Kerner index was coded 0 to 2.

[5]Number of observations in correlations with the severity scales.

TABLE 3. Regressions of Social Control Response Items on Severity, City Size, Region, and Period

	Unstandardized regression coefficient[1]			
	Dependent variable[2]			
	(1)		(2)	
Independent Variable	Called State Police		Called National Guard	
Constant	.949**	(5.44)	.134	(0.95)
Severity[3]	.042**	(6.33)	.063**	(11.80)
City Size (log)	-.071**	(-4.94)	-.014	(-1.17)
South[4]	-.013	(-0.28)	.227**	(5.61)
t_2[5]	.118	(1.74)	-.062	(-1.11)
t_3[6] (Post-Martin Luther King-Assassination Period)	-.016	(-0.33)	.104**	(2.62)
t_4[7]	-.065	(-0.97)	-.061	(-1.12)
t_5[8]	-.041	(-0.61)	-.005	(-0.08)
R^2	.17		.37	
No. of observations	300		300	

*Significant at $p < .05$.

**Significant at $p < .01$.

[1]t-values are shown in parentheses.

[2]Dependent variable coded 1 if social control agent was called, 0 otherwise.

[3]Scale values are coded 0, 1, 4, 12.

[4]Coded 1 if southern city, 0 otherwise.

[5]Dummy term coded 1 if disorder occurred during August 1967-March 1968, and coded zero otherwise. Deleted term is for January-July 1967.

[6]Dummy term for April 1968.

[7]Dummy term for May-July 1968.

[8]Dummy term for August-December 1968.

TABLE 4. Disorder Severity by Ordinal Position of the Disturbance in a City and by Time Period, 1967-68

Period	First Disturbance in City[1]		Subsequent Disturbances in City	
	(1) Mean Severity[2]	Number of Disorders	(2) Mean Severity[2]	Number of Disorders
Jan.-July 1967 (t_1)	.782	78	.913	46
Aug. 1967-March 1968 (t_2)	.750	16	.825	20
April 1968 (t_3)[3]	.510	51	1.270	37
May-July 1968 (t_4)	1.000	13	.789	26
August-Dec. 1968 (t_5)	.923	13	.659	22
N		171		151

[1]Includes only cities for which a first disorder occurred in 1967-1968.

[2]Untransformed scale values (0-3) were used to reduce the effect of very high severity scores. The pattern of results is unchanged but the effects more pronounced if transformed severity values (0-12) are used.

[3]Post-Martin Luther King-assassination period.

TABLE 5. Regressions of Disorder Severity[1] on Time Period, Number of Prior Disturbances, Negro Population Size, and Region

Independent Variable	Unstandardized Regression Coefficient[2] (1)		(2)	
Constant	-6.698**	(-5.09)	-6.772**	(-4.85)
t_2	.033	(0.05)	.019	(0.03)
t_3[3]	.967*	(2.21)	.971*	(2.20)
t_4	1.034	(1.76)	.928	(1.60)
t_5	.311	(0.51)	.384	(0.62)
1 Prior Disorder[4]	-.275	(-0.60)		
2 Prior Disorder[4]	-1.668**	(-2.64)		
3+ Prior Disorder[4]	-2.657**	(-4.05)		
Number of Prior Disorders[4]			-.445**	(-3.74)
Negro Population Size (log)	.892**	(6.52)	.890**	(6.16)
South	-1.146**	(-2.63)	-1.154**	(-2.62)
R^2	.149		.134	
No. of observations	300		300	

*Significant at $p < .05$.

**Significant at $p < .01$.

[1]Scale values of severity are coded 0, 1, 4, 12.

[2]t-values are in parentheses.

[3]Post-Martin Luther King-assassination period.

[4]During 1961-68.

TABLE 6. Sensitivity of the Regression Results to Alternate Specifications of the Severity Measure

	Standardized Regression Coefficient						
	Dependent Variable						
Independent Variable	(1) Severity 0-3	(2) Severity 0-12	(3) Severity 0-25	(4) Crowd Size[1]	(5) Log Arrests	(6) Log Injuries	(7) Canonical Model[2]
t_2	.011	.002	.001	.063	.054	.071	.075†
t_3[3]	.049	.139*	.161**	.110	.118*	.156**	.127
t_4	.047	.095	.107	-.068	-.013	.136*	.035
t_5	.047	.038	.037	.024	-.009	.107	.049
Number of Prior Disorders[4]	-.293**	-.306**	-.300**	-.177*	-.233**	-.256**	-.206
Negro Population Size (log)	.459**	.478**	.464**	.615**	.486**	.507**	.615
South	-.160**	-.153**	-.145**	-.191**	-.125*	-.157**	-.140
R^2	.12	.13	.13	.31	.15	.17	.37
No. of Observations	300	300	300	194	275	241	169

*Significant at $p < .05$.

**Significant at $p < .01$.

†Significance tests not available for individual coefficients in the canonical model.

[1]Alternate assignments of values to crowd size ranks produced comparable results.

[2]Values rescaled so that coefficient for Negro population size would be identical to value for this term in the crowd size equation. The entry in the R^2 row is the square of the canonical correlation coefficient.

[3]Post-Martin Luther King-assassination period.

[4]During 1961-68.

TABLE 7. Correlations Between Disorder Severity and Aspects of Community Structure[a]

Community Attribute	(1) Zero-Order Correlation with Disorder Severity[b]	(2) Partial correlation, Controlling for Region, Nonwhite Population, Temporal Effects, and Number of Previous Disturbances[c]
Region and Nonwhite Population Size[d]		
South (Dummy)	-.062	-.151**[h]
Nonwhite Population (log x)	.270**	.339**[h]
Indicators of Social Disorganization[d]		
Percent Change in Total Population	-.093	-.016
Percent Change in Nonwhite Population	.048	.099
Percent of Nonwhites Living in Housing Built Before 1950	.083	.014
Percent of Nonwhites Living in Housing with Substandard Plumbing	.130*	.018
Indicators of Absolute Deprivation[d]		
Percent of Nonwhite Males Employed in Traditionally Negro Occupations[f]	-.139*	-.084
Nonwhite Male Unemployment Rate	.068	.044
Nonwhite Median Family Income	.060	.034
Nonwhite Median Education	.021	-.065
Indicators of Relative Deprivation[d]		
Percent of Nonwhite Males Employed in Traditionally Negro Occupations Divided by White Figure	-.105	-.049
Nonwhite Median Family Income Divided by White Income	.074	.063
Nonwhite Unemployment Rate Divided by White Rate	.028	.031
Nonwhite Median Education Divided by White Education	.109*	.005
Percent Nonwhite[g] ($\sqrt{x}$)	.148**	.033
Indicators of Political Structure[e]		
Population per Councilman	.175**	-.019
Percent of City Council Elected At-Large	-.089	-.040
Presence of Non-Partisan Elections	-.066	-.022
Presence of Mayor-Council Gov't.	.110*	.018

*Significant at $p < .05$.

**Significant at $p < .01$.

[a]Number of observations equals 300.

TABLE 7. (cont.)

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[b]Disorder Severity coded (0-12).

[c]Control variables specified by equation (2) of Table 5.

[d]Source: U. S. Census of Population (1963).

[e]Source: The Municipal Yearbook (1965).

[f]Service workers + household workers + laborers.

[g]See footnote 19 regarding inclusion of this variable with the indicators of relative deprivation.

[h]Controls are for other variables in equation (2) of Table 5.

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