Ethnic Inequality and the Rate of Homicide*

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Abstract

In this article I address the question: does ethnic inequality — systematic economic disparities among ethnic groups — have an impact, net of other factors, on a community's rate of homicide? The results of previous studies contradict one another. This contradiction suggests a need to reexamine the logic *of the ethnic/racial inequality hypothesis and the measurement of its key variables. I argue that there are social processes* mediating ethnic inequality *and homicide, and that these must guide the measurement of the former if we wish to obtain reasonably conclusive results. After presenting an account of the pertinent theory, I introduce a measure of ethnic inequality not previously found in the criminal etiology literature. The results confirm the usefulness of this measure. Empirical findings based on 1980 data for a sample of 150 SMSAs show that ethnic inequality is a strong predictor of the rate of homicide, and that it remains the single strongest predictor even after variables operationalizing poverty, general economic inequality, regional culture, race, and anomie are taken into account.*

Criminal violence has long been thought to be a product, at least in part, of economic conditions (Bonger 1905; Shaw & McKay 1942). Attempts to refine the broad notion that poverty causes crime have led researchers to ask precisely what aspect of economic conditions it is that engenders high rates of violence. One hypothesis identifies the critical feature as severe material deprivation, or *absolute* poverty, usually operationalized as income below that required to provide the basics of life, such as food and shelter. A second hypothesis posits the crucial factor to be comparative deprivation, or *relative* poverty, usually gauged by the Gini concentration ratio or some other measure of dispersion in incomes (Eberts & Schwirian 1968). Researchers also have conjectured that an important contingency may be the extent to which *economic* distinctions correspond to *racial* distinctions: if the relatively advantaged members of a community are largely of one racial group, while the relatively disadvantaged are disproportionately of another, the effects of economic conditions may be

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especially pronounced. Perhaps high rates of criminal violence are the price a community pays for racial inequality.

Efforts to evaluate this latter hypothesis — the racial inequality hypothesis — have led to mixed results. In a study of 175 American cities, Braithwaite (1979) obtained measurements of absolute poverty, general economic inequality, and economic inequality between whites and blacks. Based on a multiple regression analysis, he concluded that *racial* inequality, net of other socioeconomic factors, does *not* produce higher rates of homicide: "Inequality between the races does not cause special problems over and above those caused by the general level of income inequality in the community" (Braithwaite 1979:219).

From a study of the 125 largest American Standard Metropolitan Statistical Areas (SMSAs), Blau and Blau (1982) arrived at a diametrically opposite conclusion. Summing up their major findings, they wrote: "Inequality engenders alienation, despair, and pent-up aggression, which find expression in frequent conflicts, including a high incidence of criminal violence. . . . When overall inequality and its mediating influences are controlled, racial inequality still exerts an independent influence on criminal violence" (Blau & Blau 1982:126-27).

The striking difference between Braithwaite's and Blau and Blau's conclusions stimulated efforts by others to resolve this disagreement. Balkwell (1983), Sampson (1985), and Messner and Golden (1985) were among those who found additional support for Braithwaite's conclusion; Blau and Schwartz (1984), Williams (1984), and Blau and Golden (1986) were among those who found further support for Blau and Blau's.

Noting the problematic replicability of either conclusion, Golden and Messner (1987) speculated that the explanation for this is probably methodological. They proceeded to try to sort out the methodological differences between the various studies, and relate those differences to results confirming or disconfirming the racial inequality hypothesis. They hypothesized that the decisive methodological differences are: (1) different measures of racial inequality, (2) different samples of communities, and (3) different control variables. To test their hypotheses, they carried out 32 separate variations of a basic regression analysis, varying these features as in a factorial experiment. Their primary finding was that when racial inequality is defined in terms of *general SES*, rather than in terms of income alone, the likelihood that it will be found to be a statistically significant predictor is increased. Another more incidental finding was that attempts to control simultaneously for such factors as absolute poverty and Southern location cloud interpretations of results, because racial inequality and these control variables "are so strongly intertwined historically and causally" (Golden & Messner 1987:539).

While these findings are instructive up to a point, they do not resolve the principal issue. Resolving that issue will require a more basic approach. It will require that we examine the *logic* of the racial inequality hypothesis, and the adequacy with which that logic has been implemented in the choices of measurement procedures and models. It is my contention that the reasons for expecting there to be a relationship between racial inequality and rates of homicide rest on some very definite *social-psychological assumptions*. These have often been alluded to, sometimes discussed informally, but never permitted to guide key measurement decisions. The implied micro-to-macro linkage has not

been adequately analyzed, with the consequence that an appropriate measure of racial inequality has not been created.[1]

The purposes of this article are: (1) to give an explicit account of the psychological and social-psychological processes presumed to *mediate* racial inequality and the rate of homicide, (2) to present a measure of racial inequality, quite different from other measures in the literature, that reflects these hypothesized processes, and (3) to present the results of an empirical test. I shall begin with an explication of the microtheory that is unmistakably alluded to in many previous discussions of the racial inequality hypothesis (cf. Blau & Blau 1982:118-19; Blau & Golden 1986:15-16; Messner 1989:597-99).

The Implicated Microtheory

THE STRESS-ANGER-DISPLACEMENT PRINCIPLE

Ideas about human frustration and responses to frustration are inescapably part of the rationale for believing there to be a relationship between racial inequality and the rate of homicide. Such ideas are not of recent origin. Historically, these ideas emerged from an attempt in the 1930s to reconcile Hullian reinforcement theory with psychodynamic concepts (cf. Dollard et al. 1939). From this theoretical perspective, aggression is seen as resulting from frustration. Blocked from attaining desired ends, a person feels anger, and is impelled to vent that anger by striking out. But striking out against whom? Or what? Launching out against the real source of the frustration might not be possible. The real source might be impersonal circumstances, with no tangible representation. Or it might involve powerful persons or groups, making it dangerous to strike out. Or the real source might simply be unknown. For a variety of reasons, then, the frustrations produced by the conditions of a person's life are likely to be taken out on others who are available and relatively powerless to retaliate.

Among academic psychologists, and later among sociologists, the frustration-aggression hypothesis underwent a period of sometimes severe criticism (for a review of the major objections, see Berkowitz 1965). Unquestionably, the frustration-aggression sequence is subject to some contingencies. As one critic of a naive frustration-aggression hypothesis pointed out: "The commonest reaction to frustration is not aggression at all, but a simple and direct attempt to surmount the obstacle in our path" (Allport 1958:329). Stated another way, the aggressive impulses produced by frustration may sometimes be channeled into instrumental activity, aimed at removing or overcoming the obstacle. Even if such impulses are channeled into overt violence, that violence is not necessarily directed against a *substitute* target. In short — and here I am agreeing with the critics of the hypothesis — the precise operation of the frustration-aggression sequence is shaped by experience and circumstances. Yet it is precisely *this qualification* that gives the stress-anger-displacement principle its most critical content, its explanatory power. It is incontrovertible that some persons in a community experience more frustrations, have fewer social or economic resources for coping with those frustrations, and have fewer realistic options for responding to those frustrations than do others. Furthermore, to the extent that a person's frustrations seem to him or her to be based on an ascribed character-

istic such as *race,* they will be compounded; for in such a case "a simple and direct attempt to surmount the obstacle" is precluded (cf. Dollard 1937).

Whatever a person's responses to the frustrations he or she routinely encounters, those reponses tend to become habitual. Characteristic patterns of displacement develop. A person's mundane, ordinary conflicts then take on a "nonrealistic" aspect (Coser 1968). When this happens, the everyday frictions that are part of any normal life come to serve a new psychological function: they provide *targets* for the expression of aggressive impulses generated elsewhere.

ETHNIC INEQUALITY AS A SOURCE

An *ethnic* group is a category of persons who consider themselves, and are considered by others, to be culturally and historically distinctive. For my purposes, an ethnic group and a racial group are the same: a group whose members have common cultural and historical roots.

Almost all modern industrial societies are multiethnic. But to say that a society is ethnically heterogeneous is not necessarily to imply that it has a great amount of ethnic inequality. It is certainly possible for a society to contain many groups with different cultural and historical traditions, yet have little or no ethnic inequality. Such a society would be one having (in the limiting case) identical distributions of material well-being within groups. This conception of ethnic equality is logically compatible not only with the existence of many distinguishable ethnic groups, but also with a considerable amount of *in*equality within each of those groups.

While perfect ethnic parity is logically possible, our concern in this article is with the effects of its absense. Where substantial economic differences among ethnic groups exist, members of disadvantaged groups are likely to feel antagonism. To a greater or lesser degree, such antagonism is a result of actual exploitation (Bonacich 1972). But often the existence of exploitation is simply inferred. Clear economic differences between "them" and "us" encourage the inference that "they" are somehow manipulating the conditions of life in the community to promote those unequal outcomes. Sometimes this may be factually correct, as when an established group has enough labor market power to exclude a less well-established group from the highest paid jobs (cf. Bonacich 1972). But whether it is objectively true or not, the belief that it is true breeds resentment.

In addition, whatever their cause, low incomes engender relatively low prestige and power. For those low in prestige and power, conflicts with members of more powerful groups are unlikely to be won, even if by prevailing standards of fairness the individual deserves to win. And to dispute the outcome of a conflict would be to invite reprisals, which would be likely to leave the person worse off than before. Under such conditions, the members of disadvantaged groups learn to put up with *indignities,* to contain their anger. Recurrent indignities that a person dares not protest promote a state of affairs in which aggressive impulses are likely to be frequent and strong, and vented against substitute targets who are accessible and relatively powerless to strike back. The person who feels victimized in countless ways, large and small, is

likely to have a short fuse in dealing with others, including his or her own family and friends.

Many homicides are seemingly inexplicable apart from some such concept of displaced aggression. Luckenbill (1977) analyzed murder as a "situated transaction" involving the offender, the victim, and often bystanders, typically entailing an escalating series of threats, counterthreats, insults, counterinsults, and rising anger and fear. At some point, knives or guns come into play, and someone ends up dead. The cause of the altercation, as given on the police homicide report, may seem incredibly minor — such as one man laughing at a scratch on another man's automobile. Upon reading Luckenbill's article for a sociology class, students are frequently unbelieving: how could someone lose his life for insulting another man's car? Such incredulity is itself evidence of the extent to which thresholds for violence depend upon the broad conditions of a person's life.

PER CAPITA DIFFUSE ANGER

Aggressive impulses that are relatively unfocused and thus easily displaced upon convenient targets can be referred to as *diffuse anger*. Diffuse anger is suppressed enmity or antagonism.

Diffuse anger may have several sources, but the one of present concern is a sense of injustice. There is a substantial theoretical and empirical literature that suggests a direct link between perceived injustice and anger (Homans 1961, 1967; Adams 1963; Berger et al. 1972; Walster et al. 1976; Jasso 1978, 1980). Jasso (1978) suggested that a person's assessments of justice involve an implicit comparison of his or her *actual* share of a social commodity, relative to his or her "just" share of that commodity. She also proposed a precise measure of perceived justice — the logarithm of the ratio — based upon the results of a large empirical study (Jasso & Rossi 1977). Specifically: Sense-of-Justice = Log([actual share]/[just share]). My concern in this article is with *in*justice, the reverse of justice, so it makes sense for my purposes to reverse Jasso's measure by interchanging the numerator and denominator (which is equivalent to multiplying by -1).

In a hypothetical community, suppose there are G ethnic groups ($G \geq 1$). Let τ_i denote the proportion of the community's population that is in the i-th group, and let π_i denote the proportion of the community's total income received by members of the i-th group. Based upon a distributive justice rationale, I suggest the following measure of *diffuse anger* deriving from ethnic inequality: $A_i = \text{Log}(\tau_i/\pi_i)$. In accordance with this measure, if the i-th group is a disadvantaged group (in distributive justice terms, an "under-rewarded" group), A_i will be positive; if it is an advantaged group ("over-rewarded"), A_i will be negative. The greater the group's *dis*advantage, the greater the value of the function.

It should be underscored that A_i represents an unobservable *potential* for overt hostility. It is the per capita, or average, tendency toward violent actions among the members of the i-th ethnic group ($i = 1, 2, \ldots, G$), deriving *not* from all sources but specifically from that group's position in a hierarchy of economic well-being. Like any other conception of a *potential*, it is observable only when

it is converted to actual behavior; its usefulness as a concept, or lack thereof, is not easily evaluated apart from the theoretical structures in which it is embedded (cf. Kaplan 1964:54-62).

Now let us shift our attention from the microtheory implicated in hypotheses about ethnic inequality to the notion of ethnic inequality itself, and to its measurement.

Measurement of Ethnic Inequality

MEASURES USED IN PREVIOUS STUDIES

Golden and Messner (1987) investigated eight different measures of what has traditionally been referred to as racial inequality. Their purpose was to relate support or nonsupport for the racial inequality hypothesis to the different "metrics" and "dimensions" represented by their eight variant measures. The four "metrics" they examined were defined by four algebraic formulas; the two "dimensions" were identified as general SES and income alone. Each of the eight measures involved comparing the socioeconomic well-being of typical whites with that of typical blacks, typical referring to the mean or median, depending upon the data available. Let W denote the typical level of SES or income for white members of the community, B that for black members. The *metrics* Golden and Messner investigated were: $M_1 = W - B$, $M_2 = W/B$, $M_3 = \text{Log}(W - B)$, and $M_4 = \text{Log}(W/B)$. What is striking about these measures is that they are in fact measures only of *black disadvantage*. While each arguably is a reasonable formalization of the degree of disadvantage faced, on the average, by the black members of a community, it is hard to imagine that *any* of them could relate strongly to the per capita potential for violence of the *entire* community.

The importance of emphasizing the *entire* community as the appropriate focus can be made clear with a hypothetical example. Suppose that Community One is populated by 99 families of Ethnic Group A and a single family of Ethnic Group B, while Community Two is populated by 50 families of Group A and 50 of Group B. Let us suppose that, in both communities, Group A families have an average annual income of $75,000, while Group B families have an average annual income of $3,000. Clearly, Group B would be a disadvantaged group in *both* communities. In each community, we would expect its members to have more diffuse anger and lower thresholds for violence than the members of Group A. But would this be expected to have the same effect on homicide rates in the two cities? Surely not. The general level of anger and potential for violence would undoubtedly be higher in Community Two, due to its larger proportion of persons subjected to the frustrations of economic disadvantage.

If this argument seems reasonable, then it must be agreed that all of the measures of racial inequality investigated by Golden and Messner are unreasonable, for each would treat Community One and Community Two as having exactly the same amount of racial inequality. Each measure considered by Golden and Messner captures the magnitude of the disparity between Groups A and B, but none takes account of the proportion of the population suffering that disparity.

The concept "inequality" is generally agreed by those who have analyzed

it carefully to refer to an *average* property of a population or community (see, for example, Patil & Taillie 1982). Somehow the disparities impacting upon individuals must be averaged over the entire population to obtain a defensible measure of inequality.

Another equally serious shortcoming of each of the eight measures is that they compare only whites and blacks. In many American SMSAs, including Denver, Eugene, Honolulu, Jersey City, Los Angeles, San Diego, San Francisco, and Tucson, whites and blacks are *not* the two largest groups. In Corpus Christi, for instance, blacks constitute only 3.6% of the population, whereas Mexicanos (persons identifying with Mexican ancestry) constitute 42.8%. In the south central and southwestern parts of the United States, the most salient ethnic conflicts typically are those between Mexicanos and Anglos (those to whom European ancestry is attributed). The income or SES gap between whites and blacks is largely irrelevant, because black members of the community are relatively rare. In Albuquerque, for example, blacks are the *fourth* largest group, comprising 1.7% of the population.[2]

If the ethnic inequality hypothesis is understood to be a macrolevel hypothesis — which clearly *is* the way most authors intend it — then the *measurement* of ethnic inequality must take account of the groups that actually exist in the community, their relative sizes, and their relative standings in a hierarchy of economic well-being. In addition, it should be logically consistent with a defensible conception of the processes assumed to *mediate* ethnic inequality and the rate of homicide.

AN ALTERNATIVE MEASURE

Consider once again a community with G ethnic groups ($G \geq 1$). Let τ_i denote the proportion of the community's population falling in the i-th group, π_i the proportion of the community's aggregate income received by the i-th group. The measure of ethnic inequality I propose is the following:

$$\text{ETHNIC INEQUALITY} = \sum_{i=1}^{G} \tau_i \, \text{Log}(\tau_i/\pi_i).$$

This measure corresponds precisely to the per capita diffuse anger (potential hostility deriving from the economic hierarchy of ethnic groups) of the *entire* community. It is a weighted average of ethnicity-specific levels, the weights being the respective population proportions.

The proposed measure also bears a very close relationship to a measure of group inequality in incomes proposed by Theil (1967:91-134). The Theil measure, translated into my notation, is given by the formula, $\Sigma\, \pi_i \, \text{Log}(\pi_i/\tau_i)$, which is the same as the proposed measure except that the roles of population proportions and income proportions are interchanged. If the Theil measure is interpreted as the inequality of income shares relative to population shares, then the measure I am suggesting can be interpreted as the inequality of population shares relative to income shares. In terms of any measure of inequality based on a Lorenz curve, these two statements are merely two ways of saying exactly the same thing. While the Theil measure is *not* derivable from the defining

assumptions of a Lorenz curve, and is *not* perfectly symmetric with respect to population and income shares, the empirical correlation between the Theil measure and the interchanged measure, for my sample of N = 150 SMSAs (to be described in the next section), is r = +0.99926. For all practical purposes, the two measures are equivalent.

Welfare economists have developed explicit criteria for acceptable measures of inequality, viz., the principle of transfers, the principle of population symmetry, and the principle of scale invariance (for detailed discussions of these properties and their importance, see Sen 1973). The measure I am suggesting satisfies each of these criteria. Although there are other measures of group inequality that are equally attractive in terms of these formal properties, such as the Atkinson family of measures (see Allison 1978; Schwartz & Winship 1980; James & Taeuber 1985), the measure proposed here has the unique advantage of being precisely taylored to the microtheory implicated in the ethnic inequality hypothesis.

Whatever the formal or logical reasons for favoring a measure, a critical test of that measure is its usefulness in empirical work. I shall now describe some research I carried out to reassess the relationship between ethnic inequality and the rate of homicide, employing the new measure.

An Empirical Test

POISSON REGRESSION MODEL OF THE HOMICIDE RATE

With few exceptions, previous researchers have posited a proportionate-effects model of homicide causation. The arguments for this functional form are substantively compelling. The *systematic* component of this model can be stated as follows:

$$\text{Log}(R) = ß_0 + ß_1X_1 + ß_2X_2 + \ldots + ß_kX_k.$$

In this equation, R denotes the expected yearly homicide rate, and X_1, X_2, . . . , X_k denote an appropriate list of independent variables.

To be realistic, a model must also have a *random* component. The random aspect in the production of homicides stems from the vagaries of contacts between potential offenders and potential victims. Whatever the sociological features of the community, the precise number of homicides occurring in an interval of time is a random variable. It is the *expected value* of this random variable that (by hypothesis) is predictable from the features of the community. The random variable itself is a count of events per unit of time, a description that suggests a Poisson or Poisson-like random component (Frome, Kutner & Beauchamp 1973). As conventionally understood, a homicide rate is a scaled count, a fact that must be taken into account in linking the systematic and random components of the model. The Poisson regression model of homicide rates employed in this research is summarized in Table 1. The regression parameters can be estimated by the method of maximum likelihood (McCullagh & Nelder 1983). The GLIM statistical package (Baker & Nelder 1978) can be used for this purpose.[3]

TABLE 1: The Random Error Structure and Functional Form of the Models to Be Estimated

Random Component:

Y = the number of homicides occurring in a time interval of length t

$$P(Y = n) = \frac{e^{-\mu t}(\mu t)^n}{n!} \qquad n = 0, 1, 2, \ldots, \quad \mu > 0, \ t > 0 \tag{1}$$

$$E(Y) = \mu t \tag{2}$$

$$Var(Y) = \mu t \tag{3}$$

Definition:

$$R = \frac{\mu}{N} \times 100{,}000 = \text{the expected yearly rate of homicide} \tag{4}$$

Systematic Component:

$$Log(R) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_K X_K \tag{5}$$

Link Function:

$$\mu = (N/100{,}000)(\exp[\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_K]) \tag{6}$$

LEGEND: μ denotes the Poisson distribution parameter, N the population size of the SMSA in question, and $X_1, X_2, \ldots, X_k$ an appropriate list of predictor variables.

ALTERNATIVE SETS OF INDEPENDENT VARIABLES

To assess the relationship between ethnic inequality and the rate of homicide, it is necessary to include an appropriate set of controls in the regression equation. Investigators are not in complete accord on what variables this set should include. In an effort to avoid prejudging controversial issues outside the scope of the present investigation, I shall estimate models that include alternative sets of control variables. The alternative models are essentially those of Blau and Blau (1982) and Golden and Messner (1987), who represent somewhat different perspectives on the etiology of homicide.[4]

Five models will be compared. The first is that of Blau and Blau. The independent variables are the logarithm of the population size, the Gini concentration ratio, the percentage of persons 15 years of age or older divorced or separated, the percentage black, and racial inequality in incomes as operationalized by Log(W/B), the most defensible of the previously employed

measures of group inequality.[5] The second model is a modified Blau and Blau model, in which Blau's racial inequality measure is replaced by the ethnic inequality measure proposed in this article. The third model is that of Golden and Messner, the independent variables being the logarithm of the population size, the logarithm of the percentage of families subsisting in poverty, the percentage of persons 15 years of age or older divorced or separated, the logarithm of the percentage black, Southern location (1 = South, 0 = non-South), and the Blau measure of racial inequality. The fourth model is a modified Golden and Messner model, in which the Blau racial inequality measure is replaced by the ethnic inequality measure of this article. And the fifth model is a very parsimonious specification in which the independent variables are the percentage of persons 15 years of age or older divorced or separated, the logarithm of the percentage black, ethnic inequality as conceptualized in this article, and *educational poverty*, the latter operationalized as the percentage of persons 18 to 24 years of age who are *not* high school graduates. The evident explanatory power of educational poverty argues for its use as a control variable.[6]

DATA AND MEASUREMENT PROCEDURES

Sample of SMSAs

The units of analysis were 150 American SMSAs. The sampling criteria were that at least one SMSA be selected from each of the 50 U.S. states, and that additional SMSAs be chosen from states in rough proportion to their respective populations. Blau and Blau's 125 SMSAs are a subset of this sample. Using the full sample or the Blau and Blau subsample makes practically no difference in the results to be reported.

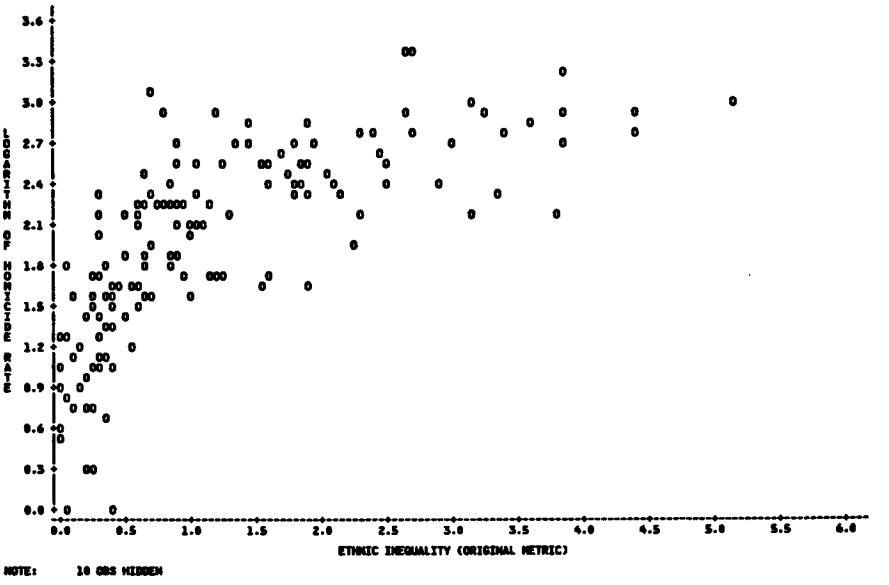
Sources of Data

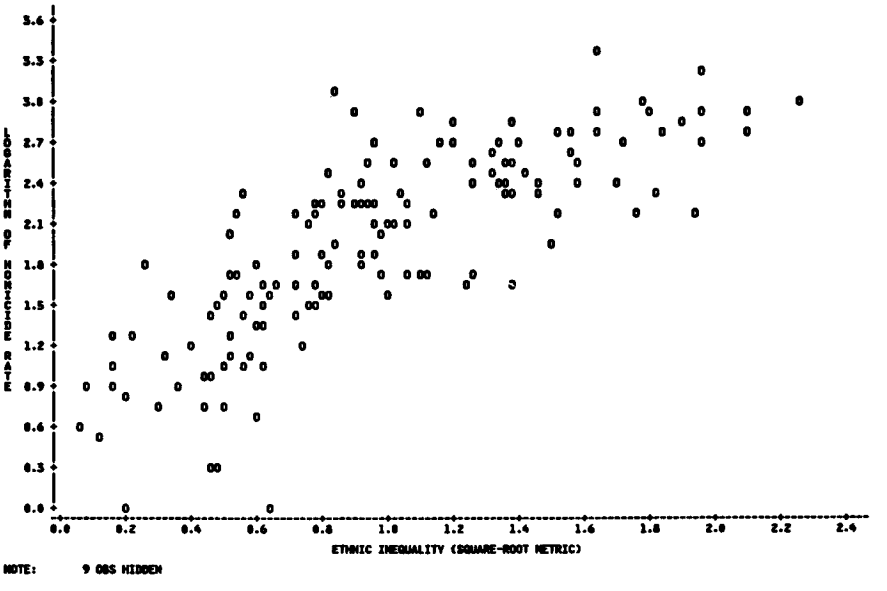
Raw data on homicides were obtained from the Uniform Crime Reports (Federal Bureau of Invesigation 1980, 1981, 1982, 1983). Homicides occurring in the years 1979 through 1982 were employed. Southern location is understood to mean that the SMSA in question is located in one of the eleven states of the former Confederacy.[7] Data on all other variables come from census reports (Bureau of the Census 1983).

The Gini concentration ratio was computed from the distributions of family income within SMSAs given in the census reports, using the Pareto curve method to estimate the per capita income of those families with annual incomes of $50,000 or more (see Shryock et al. 1973:365-66).

To compute ethnic inequality in incomes, data were obtained for five groups: (1) non-Hispanic whites, (2) non-Hispanic blacks, (3) non-Hispanic American-Indians, Eskimos, or Aleuts, (4) non-Hispanic Asian-Americans, and (5) Americans of Spanish origin. It should be noted that the tables presented in the census reports are *not* mutually exclusive, as persons of Spanish origin may also be white, black, American-Indian, or Asian-American. But it is possible to make the appropriate adjustments to obtain these five mutually exclusive ethnic categories.[8]

FIGURE 1: The Bivariate Relationship Between Ethnic Inequality in Incomes and the Log-Transformed Rate of Homicide





Transformations

The model as seen in equation 5 of Table 1 states that Log(R) is a linear function of the independent variables. To insure that this assumption is satisfied, it might be desirable in some cases to let the X's be monotonic transformations of substantive variables (for instance, the logarithm of the percentage black instead of simply the percentage black). In the Blau and Blau model, I followed the guidance of these authors in making or not making transformations — likewise, in the Golden and Messner model. In the cases of models including ethnic inequality as a predictor, I opted for a square-root transformation of ethnic inequality. The bivariate relationship between ethnic inequality (original metric and square-root metric) and the log-rate of homicide is depicted in Figure 1. From these plots, it seems clear that the square-root transformation does improve the linearity of the relationship. (In Figure 1, scores on ethnic inequality are multiplied by 100.)

RESULTS

Bivariate Associations

The relationships between all pairs of variables used in this research are presented in Table 2. Pearson correlation coefficients are contingent upon a researcher's choices of variable transformations. Spearman correlation coefficients, in contrast, are invariant with respect to monotonic transformations of any or all of the variables, in that sense being more objective as indications of relationships. Because investigators differ about the merits of particular transformations, Table 2 presents the relatively more objective Spearman coefficients.

Among the independent variables of the Blau and Blau model, the highest correlation is that between the Gini concentration ratio and the Blau measure of racial inequality (+0.636). Among the independent variables of the Golden and Messner model, the highest correlation is that between Southern location and the percentage black (+0.617). Concerning correlations between the *dependent* variable and the various candidates for independent variables, the single highest correlation is that between ethnic inequality and the rate of homicide (+0.832).

But such variables as the Gini concentration ratio, the percentage of families in poverty, and the percentage black have substantial relationships to *both* the degree of ethnic inequality and the rate of homicide. The question is: does the relationship between the latter two hold up when suitable controls are introduced?

Regression Results

In the following discussion, the strength of a predictor refers to the estimated change in Log(R), given a one standard deviation change in the predictor in question, other predictors remaining constant. The Poisson regression coefficients are to be interpreted in this way; they are the coefficients of their associated independent variables in z-score form.

Results from estimating the five alternative specifications of the Poisson regression model are summarized in Table 3. Consider first the Blau and Blau

TABLE 2: Spearman Rank-Order Correlations Among Variables

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Homicide rate	1.0									
(2) Population size	.374	1.0								
(3) Gini ratio	.726	.155	1.0							
(4) W/B inc. ratio	.553	.200	.636	1.0						
(5) % divorced	.358	.161	.214	-.082	1.0					
(6) % black	.768	.354	.364	.544	.018	1.0				
(7) % in poverty	.647	.057	.788	.533	.005	.604	1.0			
(8) Southern loc.	.566	.002	.520	.490	.051	.617	.577	1.0		
(9) Educ. poverty	.624	.127	.383	.255	.231	.468	.515	.451	1.0	
(10) Ethnic inequal.	.832	.356	.746	.764	.073	.792	.677	.581	.485	1.0

N = 150 SMSAs

specification. Although the present research uses data ten years more recent, and a somewhat different sample of SMSAs, it reproduces Blau and Blau's results (1982:124) remarkably well. All five predictors have statistically significant regression coefficients at significance levels well beyond the .001 level.[9]

Although each independent variable has a significant coefficient, the racial inequality variable is clearly the *weakest* predictor of the five. But when the Blau measure is replaced by the measure of ethnic inequality proposed in this article, the new variable becomes the *strongest* predictor of the five (compare the first and second columns of Table 3). The variation explained by the independent variables jointly increases from 74.6% to 78.2%. With ethnic inequality in the model, the coefficients of population size and the Gini concentration ratio become greatly reduced in magnitude.

Turning now to the Golden and Messner model, we again find that all the independent variables have statistically significant coefficients, but again the measure of racial inequality is one of the *weakest* predictors (being essentially tied for weakest with Southern location). When the Blau measure is replaced by the measure of ethnic inequality proposed in this article, the new variable becomes the *strongest* predictor, and variation explained by the independent variables jointly jumps from 80.9% to 83.3%. The regression coefficent of absolute poverty becomes substantially reduced.

Finally, in the fifth model there are only four independent variables, but they jointly account for 85.7% of the variation in homicide rates. In this model, population size, absolute poverty, and Southern location have been dropped from the set of predictors, while *educational poverty* has been added. The explained variation, in spite of fewer predictors, increases by 2.4%. Once again, ethnic inequality is the *strongest* predictor, although all four predictors have regression coefficients that are statistically significant at well beyond the .001 level.

TABLE 3: Poisson Regression of the Rate of Homicide on Alternative Sets of Independent Variables[a]

Independent Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Log(pop. size)	.122	.052	.176	.105	
	(±.025)	(±.024)	(±.028)	(±.031)	
Gini ratio	.175	.034			
	(±.028)	(±.040)			
Log(W/B)	.095		.087		
	(±.026)		(±.032)		
% divorced	.226	.233	.210	.210	.181
	(±.024)	(±.022)	(±.022)	(±.021)	(±.020)
% black	.238	.151			
	(±.026)	(±.031)			
Log(% black)			.244	.201	.223
			(±.035)	(±.034)	(±.029)
Log(% poverty)			.176	.067	
			(±.026)	(±.034)	
Southern location			.086	.082	
			(±.025)	(±.023)	
Educational poverty					.153
					(±.023)
Ethnic inequality		.311		.231	.267
		(±.058)		(±.046)	(±.025)
R^2	.746	.782	.809	.833	.857

N = 150 SMSAs

[a] The numbers in parentheses are the estimated standard errors of the regression coefficients.

Discussion

Debate over the racial (ethnic) inequality hypothesis has been intense for nearly a decade; the roots of the debate go back much further. The contradictory conclusions reached by Braithwaite (1979) and Blau and Blau (1982) have stimuluted a large volume of research, but a satisfactory resolution of the issue has been elusive. The research reported in this article strongly supports the ethnic inequality hypothesis.

My investigation of the *logic* of the ethnic inequality hypothesis suggests a likely reason for the inconsistent support for this hypothesis in the past. Namely, the *measures* of group inequality employed in previous studies have

not adequately corresponded to the *concept* supposedly being measured. Each is a reasonable measure of black disadvantage, but none takes account of the proportion of the population suffering that disadvantage, and none allows for the possibility that groups other than blacks might be disadvantaged in some communities. Compounding these weaknesses is the fact that these previous measures have been more highly correlated with other independent variables than with the dependent variable, making their *apparent* effects highly dependent upon what other predictors are in the regression equation.

I have proposed a substantially different measure of ethnic inequality that applies to any number of ethnic groups, and that reflects both the relative economic well-being of those groups and their relative sizes. Although this measure is correlated with other important predictors of the homicide rate, it is even more highly correlated with the homicide rate itself, which makes its estimated effects quite robust with respect to the other variables included in, or omitted from, the model.

While the research reported in this article strongly supports Blau and Blau's racial/ethnic inequality hypothesis, the present theoretical approach is considerably at odds with the intent of Peter M. Blau's (1977) macrostructural theory. In Blau's theory, "the causal relations supposedly at work are obscure — although evidently supposed to operate in some way outside the scope of [individuals' motives]" (Giddens 1984:211). The ethnic inequality controversy illustrates some of the pitfalls of black-box structuralism. Acknowledged or not, there are microlevel assumptions embedded in any macrolevel theory. In macrolevel structuralism, the embedded microlevel assumptions often are tantamount to a naive behaviorism (cf. Giddens 1984:207-8). It may well be that the coherence and performance of macrostructural theories will improve as more attention is paid to their social-psychological foundations. Given a macrosocial proposition, "X leads to Y," it may be useful to ask: *how* does a change in X produce a change in Y? And what are the implications of the answer for the conceptualization and measurement of X and Y?

Notes

1. Failure to adequately analyze the processes mediating racial inequality and the rate of homicide may reflect in part a theoretical stance. Peter M. Blau's macrostructural theory was intended to provide explanations of a population's observable tendencies without reference to human actors' intentions, motives, or reasons. While Blau and Blau (1982) and Blau and Golden (1986) often depart from this extreme structuralist position, their commitment to structuralist principles nonetheless makes it awkward for them to give, in my view, adequate attention to mediating social-psychological processes. For an incisive critique of Peter M. Blau's structuralism, see Giddens (1984:207-13).

2. One might argue, of course, that the situation of black Americans is quite different from that of other ethnic groups, and warrants special attention in explanations of rates of homicide. Indeed, one prominant analyst (Wilson 1987:20-62) has suggested that many of today's inner-city pathologies, including high rates of violent crime, are traceable to a *unique* conjunction of historic discrimination against blacks, basic changes in the economy, changes in migration patterns, and related social upheavals. Wilson's argument is persuasive. Nevertheless, the crucial question is: in a model of homicide causation, is this unique historical confluence not adequately reflected in currently existing economic inequalities? Do its residues continue to create stresses for black Americans *over and above* those created by economic disparities? For the

sake of argument, suppose the answer to the second question is yes. This still would not rule out the possible existence of a general ethnic inequality effect, operating *in addition to* whatever other factors operate. In a regression analysis, a researcher should be able to more or less adequately take account of any effects unique to the situation of black Americans by including "percent black" as an additional independent variable.

3. For those who wish to reproduce the results to be reported, two additional items should be noted. One is that all independent variables were standardized, or put in z-score form, using caseweights proportional to population size in computing the various means and standard deviations. The other is that I employed a feature of the GLIM package that permits *relaxing* the assumption that, within each SMSA, the mean and random variance of the number of homicides are equal (see equations 2 and 3 in Table 1).

The classical Poisson assumption of equal variance and mean is probably seldom satisfied in social science applications of Poisson regression (cf. Maddala 1983:51). Relaxing it, however, is easily accomplished. This entails estimating an additional dispersion parameter (see McCullagh & Nelder 1983:131-33). It is posited that $E(Y_i) = \mu_i t$ and $Var(Y_i) = \sigma^2 \mu_i t$, where σ^2 is the under/over dispersion parameter. Estimating this additional parameter does *not* change the numerical estimates of the *regression* coefficients at all. What it *does* change is the estimates of their standard errors, in the present case making these larger, thus making confidence intervals wider, and tests more conservative.

4. These perspectives are by no means mutually exclusive. Nonetheless, Blau and Blau unquestionably prefer a social-structural explanation of rates of homicide, and a view of poverty as relative deprivation for a category of the population. Golden and Messner are more receptive to a subcultural explanation, and a view of poverty as absolute deprivation. My concern here is to choose control variables that clarify the relationship between ethnic inequality and the rate of homicide, not to prejudge other important issues.

5. In their original analysis, Blau and Blau employed the mean SES difference between whites and blacks as their measure of racial inequality. What I shall call the *Blau measure* is a measure employed in a related article by Blau, Blum, and Schwartz (1982). This latter measure has the property of being unaffected by the cost of living or by the general level of economic well-being in a community.

6. Educational deficiency appears to me to be the single most important component of what has been called "structural poverty" (see Loftin & Hill 1974:719). Moreover, the inclusion of an educational deficiency variable is suggested by Golden and Messner's finding that SES, a combination of income and education (Duncan 1961), is more closely related to homicide rates than is income alone. I opted against treating SES as a single dimension, as Golden and Messner did, because I believe that income and educational attainment are implicated differently in the etiology of homicide.

7. Golden and Messner used the proportion of the population born in the South as their measure of Southernness. The alternative measures of Southernness produce practically identical results (cf. Blau & Golden 1986:17).

8. Although distinguishing between *five* categories of ethnicity is a large improvement over distinguishing between only two, it is merely a step in the right direction. In Miami, for example, we ideally should treat Cubans and Haitians as separate ethnic groups, rather than collapsing them into the single category of Hispanic-Americans — similarly, the various white ethnic groups, the various Asian-American ethnic groups, and so forth. The obstacle to making finer distinctions is *not* a formal obstacle. Were the necessary data available, we could identify, say, $G = 30$ ethnic groups. For any given SMSA, some of the terms in $\Sigma\, \tau_i \, \mathrm{Log}(\tau_i/\pi_i)$ would then be *zero* [by mathematical convention, $0 \cdot \mathrm{Log}(0/0) = 0$], but this is true even with the present five categories. In general, the effect of collapsing categories depends upon the homogeneity of the categories collapsed, as indicated by their τ/π ratios. If these ratios do not differ, collapsing makes no difference; if these ratios do differ, collapsing results in underestimating the actual degree of ethnic inequality.

9. For ease of presentation, I have referred to the various independent variables by their abbreviated names. "Poverty" is actually the logarithm of the percentage of families in an SMSA subsisting below the U.S. government poverty threshold, and similar remarks apply to several of the other variables.

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