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AUTHOR	Rossell, Christine H.; Crain, Robert L.
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ABSTRACT

This report attempts to provide a standardized evaluative measure for both school desegregation initiated by administrative action and the result of that action or lack of action. The latter measure, the measurement of school integration, involves two techniques--a uniform standard index which sets the same goals for all school districts, and one which sets appropriate goals for each school district by taking into account politically feasible black-white ratios in individual schools. The 90 northern cities in our sample are ranked according to their scores on these three measures. In this report we will first describe how we collected our data, and from it computed a measure of desegregation action from 1964 to 1971. The second section presents the index of dissimilarity of segregation in each school district. The third section indexes the degree of desegregation possible in each district taking into account the need for politically racial compositions. Then in the fourth section we will look at the amount of administrative action which has taken place in each measured district compared with the above indexes of desegregation. Fifth we present a regression analysis in an effort to explain and predict the differences between cities in degree of segregation. Finally, we look at yearly trends in desegregation in these cities. (Author/JM)

EVALUATING SCHOOL DESEGREGATION PLANS STATISTICALLY*

Christine H. Rossell
Robert L. Crain

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Summary

This reports represents an effort to examine some methods of evaluating the amount of black-white school desegregation in 91 northern cities in the Fall of 1971. The 91 cities include all large northern cities and a sample of smaller ones. First, a measure commonly used to assess residential segregation, here called the Taeuber Index, indicates very wide variation, from some virtually unsegregated cities such as Berkeley, Pasadena, and Pontiac to some highly segregated cities such as Cleveland, St. Louis, and Chicago.

Second, an "index of feasible desegregation" is computed which takes into consideration the commonly voiced complaint that there are not enough white students to desegregate some big cities. The complaint is found to be exaggerated; no more than 10 of the 91 cities are highly segregated for this reason alone.

Third, the paper reports on a survey of school administrators in these districts which shown that the majority of the cities (57 of 90) have reassigned at least a few students for desegregation. However, only 21 cities have reassigned as many as 10% of their black students, and only 4 have transferred 5% of their white students.

The report demonstrates, by statistics and graphs, that almost all of the desegregated school systems are desegregated because of the school system's efforts; only 2 of the 18 highly desegregated districts have not reassigned students.

Finally, the paper shows that desegregation efforts in these cities declined between 1967 and 1971. Most desegregation which took place in the Fall of 1971 occurred in districts which had begun desegregation in a prior year; only one city began desegregation in the Fall of 1971.

EVALUATING SCHOOL DESEGREGATION PLANS STATISTICALLY

Choosing Between Goals

The breakdown of a clear-cut single rationale for desegregation has also meant a breakdown both in the planning of desegregation and in the evaluation of desegregation plans. Most of the desegregation plans drawn for American cities have received more criticism than praise. Partly, this is because criticism is more rewarding an occupation, but it is also because no single plan can achieve all the possible goals which different critics would endorse, each from a different viewpoint. example, a plan which simply buses blacks from ghetto schools into white neighborhoods might be considered satisfactory if its goal were primarily to raise black achievement or to reduce white prejudice. However, it might be sternly criticized for its failure to bus whites into ghetto schools, a necessary part of any plan intended to eliminate every segregated school in the district.

In fact, we think most desegregation planners are operating without any clear rationale for their plans. A desegregation plan cannot be based exclusively on the idea of raising black achievement. If it were, it would run afoul of black militants, proponents of compensatory education and critics persuaded that desegregation will not raise test scores. Desegregation cannot be aimed exclusively at reducing white prejudice. It is not even clear that this is a proper concern of the school system. Desegregation can be a useful tool for stabilizing racially changing neighborhoods, but this goal must remain unspoken, since it represents an essentially racist position by implicitly favoring the concerns of white property owners over those of black students.

In the absence of any clear cut short run goals for desegregation plans, the planner is tempted to drift into a utopian view. Desegregation plans are good if (and only if) they lead to the desegregation of every school in the district. The result is widespread favorable publicity for only a small number of communities, usually communities with a small and middle class ghetto, such as Riverside, California or Evanston, Illinois because these are the only kinds of communities which can desegregate all their schools. At the same time New York City, which in some ways has done much more to desegregate schools than any other city, has received little or no favorable publicity.

The result is a common complaint in every city with a large black population: "We can't desegregate the schools because there are not enough whites to go around." If the only acceptable goal of the desegregation plan is the total desegregation of every school, this may be correct. If any alternative goal for desegregation is acceptable, then this becomes merely an excuse to permit the segregation of hundreds of schools in white neighborhoods in Chicago, Los Angeles and a host of other cities.

The failure to agree on the goals of desegregation has led to widespread misinterpretation of the statistics used to measure degree of integration in northern school systems. Thus, only one-half of the black students in the New York public school system are in predominantly white schools. Such a fraction seens unimpressive compared to the amount of desegregation in some southern rural counties today. In fact, that figure for New York City represents the provision of integrated

education for 190,000 black students. If there were no busing program, or any efforts by the New York City housing department to desegregate housing, the number would be a great deal smaller.

The evaluation of school desegregation is thus hampered by a lack of clear cut goals, a standardized evaluation technique, and a uniform reporting system. This report attempts to provide such a standardized evaluative measure for (1) school desegregation initiated by administrative action, and (2) the result of that action or lack of action - the level of integration in the school district. The latter measure, the measurement of school integration, involves two techniques - a uniform standard index which sets the same goals for all school districts, and one which sets appropriate goals for each school district by taking into account politically feasible black-white ratios in individual schools. The 90 northern cities in our sample are ranked according to their scores on these three measures.

How We Measured School Desegregation Action

In this report we will first describe how we collected our data, and from it computed a measure of desegregation action from 1964-1971. The second section presents the index of dissimilarity of segregation in each school district. The third section indexes the degree of desegregation possible in each district taking into account the need for politically feasible racial compositions. Then, in the fourth section, we will look at the amount of administrative action which has taken place in each measured district compared with the above indexes of desegregation.

Fifth, we present a regression analysis in an effort to explain and predict the differences between cities in degree of segregation. Finally, we look at yearly trends in desegregation in these cities.

Although racial composition statistics, such as those put out by the government can tell you what schools in any district are integrated according to whatever definition you want to use, they cannot tell you why they are integrated. An integrated school situation could be the result of unplanned residential integration of the school neighborhood or the result of planned administrative action taken to change the racial composition of a school.

A good measure of school desegregation action should indicate the actual proportion of students reassigned from one school to another to increase integration. A simple classification into categories such as "busing" or "no busing" without measuring the extent of the action would lump a school system that buses five percent of its students for integration purposes into the same category as a system that buses fifty percent.

The first step in computing a measure of the number and proportion of students moved was to compile a list of bi-racial schools from the 1970 Department of Health, Education, and Welfare Directory of Public Elementary and Secondary Schools in Selected Districts for each of our northern cities.[2] "Biracial" for our purposes was defined as a minimum of 10% black and 10% white. An exception was made for those districts which had a black student population of 10% or less. For those

school districts the threshold for biracialness was lowered for the black student population to approximately the same percent as in the district as a whole. Although this means that the same criterion was not used for every city in compiling the list, it seemed to be justifiable since it is undoubtedly much easier for school districts with a small black population to have biracial schools than it is for those with a large black population. We have excluded other nonblack minorities from the computation of this measure simply because our concern is with the problem of political pressures and responses to the segregation of blacks from whites. Other nonblack minorities simply do not exert similar pressures nor arouse the same kinds of fears. However, our definition does implicitly include nonblack minorities to some extent. Although an all-Spanish surname school or a school which is half black and half Spanish surname, is not biracial by our definition, these are the same kinds of schools that would not be considered integrated by political groups or school administrators. A school that is 10% black, 10% white, and 80% Spanish surname <u>is</u> biracial by our definition (although it should more properly be called triracial). Thus the only schools we are excluding which might be called "integrated" by the community, are schools that are half Spanish surname (or another nonblack minority) and half white with less than 10% blacks. These represent only a tiny fraction of our sample.

After determining all the biracial schools in each school district, a questionnaire was constructed in a table form with a biracial school for each row. The column headings, representing seven alternative explanations of why a particular school was integrated, are as follows:

(1) "Natural Integration": neighborhood school serves is biracial; (2) Boundaries redrawn to assign more blacks to school (approximate date): (3) Blacks permitted to voluntarily transfer from outside the school attendance zone (approximate date): (4) Some blacks required to transfer from outside the school district (approximate date): (5) Boundaries redrawn to assign more whites to school (approximate date): (6) Whites permitted to voluntarily transfer from outside the school attendance zone (approximate date): and (7) some whites required to transfer from outside the school district (approximate date).

As was expected, the reason for the existence of most biracial schools was simply unplanned residential integration -- sometimes more accurately termed, a "changing neighborhood". If an action was checked as a reason, we requested an approximate date of the action (e. g. Fall 1968). A supplementary page asked if the grade span had ever been changed to facilitate desegregation: if any school not on our list had become biracial since Fall 1970 as a result of planned integration: whether any intentionally desegregated schools had become segregated since 1970 as a result of the school system discontinuing an integration plan: whether any of the desegregation or integration indicated had been ordered by a local or federal court; and whether they were now under a court order which would require them to desegregate any additional schools in the future.

The questionnaires were mailed to school superintendents offices or school district offices in 91 cities. The response rate for the mailed

questionnaire was approximately 50%. Subsequent telephone interviewing utilizing the same questionnaire brought the response rate up to 98.9%. Out of the original ninety-one cities sample only St. Louis would not give out information and this was because they were under litigation. [3]

For those cities that indicated an action taken earlier than 1967, it was necessary to obtain from the school administration school racial composition statistics for the year indicated and the year before. Our feeling was that if indeed a school district had taken some action to desegregate some or all of their schools, they would have had to have some racial composition data on which to base their action. School administrators don't just blindly start moving students around without knowing how many they have and who they have to move. The only anticipated problem was that the data would not be saved or would be filed away in some forgotten corner of an administrative office. In fact, almost all of the cities that indicated they had taken an action, did indeed have the data we requested and were quite willing to send it. Only a few cities claimed an action before 1964. Unfortunately most of them had not retained any racial composition data. Because of this, we made a decision to analyze only desegregation which occurred after the Fall of 1964, since this was the first year in which we could secure fairly complete data for all cities claiming actions taken. The time limits for this part of the study were then set at Fall 1964 through Fall 1971.

The actual computation of the measure of students moved for desegregation purposes is very simple. In those schools in which the

respondents indicated an action had been taken, the racial composition of the school during the year before school desegregation was subtracted from the racial composition of the school during the year the action was taken. Thus if a respondent indicated that School X had had its boundaries redrawn to assign more blacks to the school in Fall 1967, we would subtract the racial composition of 20 black students, and 200 white students in Fall 1966 from the Fall 1967 composition of 50 black students and 170 white students. That school district would be given credit for having moved 30 black students to a predominantly white school. We decided not to give them credit for moving 30 white students out of School X. because we felt that we would, in effect, be measuring the same thing as the percentage of black students moved. Moreover, in those districts which only desegregated a few schools it was difficult to tell what was "white flight" and what was planned removal of students to make room for the black students. In most cases where the white students were purposely removed they were simply sent to another white school in the district. However, the school district was given credit for those 30 white students if they were sent to a predominantly black school as indicated on the questionnaire and verified by the racial data. We could be sure that was the result of an administrative action! In this case, another (predominantly black) school whose white enrollment increased by 30 students would be given credit for receiving 30 white students in 1967. School districts were also given credit if they claimed to have drawn the original boundaries for a new school (built between 1964 and 1971) so that it would be integrated. They were given credit for the

minority student population in such a school and for both races if it was approximately 50% black and 50% white.

The total movement for all schools in a district were added to get a total of the black students reassigned and the white students "reverse integrated" for that year. (For the above hypothetical case, they would get credit for having moved 30 blacks and "reverse integrated" 30 whites for the year beginning Fall 1967.) The yearly total was then divided by the school district black and white population to obtain the percentage of the district's black and white students reassigned for desegregation purposes in that year. Although the yearly scores were retained in order to analyze trends, a summary score was also computed of the total number of black and white students reassigned in a school district (for desegregation purposes) from 1964 to 1971. In all instances, the credit given for the number of students moved in a school or school district represents only the increment in any one year.

It is important to note that we did not demand that the primary goal of an action be to desegregate a school. If a reassignment of students to eliminate overcrowding resulted in integration, we gave them credit for that. It would be preferable to assign more weight to actions taken specifically to increase integration, but it was too difficult to determine primary and secondary motivations. Moreover it is doubtful school administrators themselves could even remember such motivations. One city that initiated a great deal of desegregation claims to have reorganized the school district rather than desegregated it.

Our belief is that administrators know the consequences of their actions. Although they may claim to be acting for other reasons, we assumed they were aware of any resulting integration and we gave them credit for it.

There was, however, some misinformation concerning past actions taken in particular schools. It was not uncommon to have respondents claim to have moved black students into a particular school and discover when comparing the yearly racial composition that in fact the black population in that school had declined, or that although it had increased, the school was a predominantly black school to begin with. Obviously, no matter what they claimed on the questionnaire, school districts were not given credit for actions unless those actions did, in fact, result in changing the racial balance in the direction of an integrated school. Thus some of the cities we have scoring 0 on "percent blacks moved," claimed to have taken some action which we could not substantiate by examining the racial data. Other cities claimed to have taken an action years earlier than we give them credit for, because, again, we could not substantiate their claim when we looked at the racial census changes. While sins of commission were easily detected, sins of omission were impossible to catch. If a respondent erred in checking neighborhood patterns as a reason for biracialness, there was no way we could tell whether a school's biracialness was due to an administrative action that they had failed to mention. Furthermore, we suspect that if a more important action was taken at a later year then earlier smaller actions may not have been mentioned.

Because we first defined "biracial" schools as a minimum of 10% white and 10% black, (with the exception mentioned) the result was to limit credit to those schools in which desegregation did result in at least two clearly visible races in a school, and which was lasting in the sense that it had to appear in the 1970 school racial census. Thus if a school district had a small black population and an all black school was closed, this might not show up on our questionnaire if the students were spread all over town so that no one school received enough to bring them up to our threshold level. To some extent, this is unfortunate since it means that a school which went from 9% black to 10% black because of an administrative action would be given credit, while a school which went from 2% black to 3% black would not. On the other hand, it can be argued that it is more significant, if one's goal is "visible integration," when a school goes from 9% to 10% black than when it goes from 2% to 3% black. Furthermore, lowering the threshold to something like 1% would have resulted in a much more lengthy questionnaire, thus lowering the response rate and increasing the response error.

The number of black and white students moved was not the only information obtained from the questionnaire. The number of schools in which a desegregation action was taken, and the percentage of the district schools which they represented, was also computed for each year and the total period. Information was obtained on how much of the desegregation in each district was mandatory and how much voluntary, and what school districts desegregated under court order. (All of these variables will be analyzed later in the report.)

Measuring School District Integration

It is not enough, however, to know how many students were moved for desegregation purposes and the number of schools involved. It is also necessary to know what effect it had on the school district. City X may have moved five percent of their school district population while City Y moved ten percent, but the result in the former city may be perfect integration, while the latter may remain highly segregated. Thus we need a measure of integration to be used in conjunction with the measure of action in order to accurately and completely evaluate a desegregation plan.

Such a measure of integration, computed solely from racial census data, is also a check on the validity of our questionnaire. For example, a city might be credited with a low level of school desegregation, but have a high level of integration. Such a discrepancy could be due to a failure to mention small actions taken to change the racial balance or a failure to take credit for building a school in an area where it would be integrated. Another possibility is that a high level of residential integration has caused "natural" school integration - i. e. school integration that is the result of integrated school attendance zones. However, as will be seen in the last section of this report, the measures of school district integration correlates highly with the percent of students reassigned. Thus our measure of integration is indeed measuring the result of a school desegregation action. The natural pattern of

northern schools appears to be a segregated one and it takes some administrative action to change this.

The first of the two measures of integration we have computed is an adaptation of the index of dissimilarity, sometimes called the Taeuber Index.[4] This is an index that was originally used to measure residential segregation, but which works very well in measuring school integration.[5] The underlying rationale for the Taeuber Index is simple, in this case applied to the analysis of school integration.[6] If whether a person was black or white made no difference in his residential location and which school he attended then every school in a district would have the same percentage of black students as in the district as a whole.[7] Thus a school district which was 50% black would be expected to have a 50% black student population in each school. This situation would be considered perfect integration and the school district would receive a score of 0. This score represents the minimum percent of blacks which would have to be moved, if no whites were moved, to produce the same percentage of blacks in each school as in the district as a whole. In this case 0 percent blacks would have to be moved. The Taeuber Index can assume values between 0 and 100, so that the higher the score, the higher the degree of school segregation in a district. Although theoretically a score of 100 means that 100 percent of the blacks would have to be moved, actually only 50 percent would have to be moved if the school district exchanged the blacks with whites. Although one-way busing of blacks is probably the most politically feasible, it would not

result in total integration in most school districts because the number of seats in which schools (or any school) is finite. Thus, school systems with an ambitious school building program (presumably those with high growth rates) have an advantage because they have more room in their schools. They can move more black students into white schools without moving white students into predominantly black schools. A system which has to move fewer students and can avoid moving white students is able to initiate more school desegregation - which increases their level of integration.

We have listed each of our cities and their scores on the two types of measures we have computed: the measure of school integration and the measure of school desegregation action. Table 1 shows the distribution of our ninety-one cities on the measure of school integration adapted from the Taeubers' Index. As can be seen from Table 1, most cities would have to move more than half of their black students to get a perfect score on the school district Taeuber Index. The average score is 56.2 and the score which represents the middle of the distribution is 56.5. When the Taeuber Index gets as low as 6.1 for Berkeley, 12.1 for Pontiac and 12.5 for Pasadena, it really loses most of its meaning. For all practical purposes these school systems are "perfectly" integrated since to move a few percent more black students just to reach some ideal score might do more harm than good. This is particularly true in the latter two cities which experienced a great deal of controversy when they desegregated their schools in 1971 and 1970,

Table 1

Ninety-one Cities Ranked by School District Taeuber Index

mean 56.2
median 56.5

	Taeuber Index		
Berkeley, Calif.	6.1	Charleston, W. Va.	56.5
Pasadena, Calif.	12.1	Yonkers, N. Y.	57.9
Pontiac, Mich.	12.5	New York, N. Y.	58.2
Wichita, Kans.	18.6	Lexington, Ky.	58.5
Riverside, Calif.	23.7	Jersey City, N. J.	58.9
Niagara Falls, N. Y.	24.7	Seattle, Wash.	59.3
San Francisco, Calif.	24.7	Tulsa, Okla.	60.7
Providence, R. I.	29.4	Camden, N. J.	60.7
Tacoma, Wash.	30.9	Flint, Mich.	62.4
Ann Arbor, Mich.	31.0	Waterloo, Iowa	64.2
Lansing, Mich.	32.3	Kansas City, K.	63.4
Cambridge, Mass.	33.2	Rockford, Ill.	64.4
Grand Rapids, Mich.	33.6	Buffalo, N. Y.	66.3
Erie, Pa.	33.7	Minneapolis, Minn.	66.6
Stamford, Ct.	35.2	Hamilton, Ohio	67.2
Las Vegas, Nev.	35.5	Indianapolis, Ind.	67.6
Sacramento, Calif.	36.9	Youngstown, Ohio	67.7
Springfield, Mass.	39.6	Springfield, Ill.	68.1
Utica, N. Y.	40.6	Toledo, Ohio	68.3
Waterbury, Ct.	42.3	Pittsburgh, Pa.	68.4
Rochester, N. Y.	42.4	Omaha, Nebr.	68.7
Santa Monica, Calif.	43.2	Cincinnati, Ohio	68.8
Warren, Ohio	43.4	Akron, Ohio	69.3
Peoria, Ill.	44.1	Hartford, Ct.	70.3
San Bernardino, Calif.	44.8	San Diego, Calif.	70.5
Lima, Ohio	45.4	E. St. Louis, Ill.	71.4
Bridgeport, Ct.	45.6	Columbus, Ohio	73.3
Paterson, N. J.	47.0	Albuquerque, N. M.	73.6
Passaic, N. J.	47.1	Detroit, Mich.	75.2
Syracuse, N. Y.	47.5	Phoenix, Ariz.	75.3
Waukegan, Ill.	49.2	Oklahoma City, Ok.	77.9
Racine, Wisc.	49.2	Philadelphia, Pa.	78.8
Wilmington, Del.	49.9	Newark, N. J.	78.9
Colo. Springs, Colo.	50.0	Washington, D. C.	80.4
St. Paul, Minn.	50.9	Louisville, Ky.	80.7
Portland, Oregon	51.2	Dayton, Ohio	80.8
Ft. Wayne, Ind.	51.4	Baltimore, Md.	82.3
Albany, N. Y.	53.2	Milwaukee, Wisc.	83.3
Denver, Colo.	53.9	Saginaw, Mich.	83.4
Evansville, Ind.	55.0	Gary, Ind.	84.3
Muncie, Ind.	55.1	Kansas City, Mo.	86.3
E. Orange, N. J.	55.9	Los Angeles, Calif.	87.1
Trenton, N. J.	56.0	Cleveland, Ohio	88.1
Des Moines, Iowa	56.2	St. Louis, Mo.	88.3
South Bend, Ind.	56.3	Chicago, Ill.	89.8
New Haven, Ct.	56.5		

respectively. Although most of our largest cities such as Los Angeles, Detroit, Chicago, Newark, Philadelphia, Baltimore, Washington and St. Louis fall in the very bottom of our distribution, New York has a score which is near the median. Their voluntary busing program and a policy of encouraging boundary changes that increase integration has resulted in a score at least twenty-five points better than any other large city. This has put it on a par with cities such as Seattle, which has a small minority population, and Denver which initiated some desegregation under court order (until it appealed the decision).

Although the Taeubers' Index is a good measure of the degree of actual integration in a school system, it is not "policy-oriented". In other words, it does not take into account what is politically and logistically feasible for that system. It treats tiny Lima, Ohio essentially the same as sprawling Los Angeles simply because they have the same percentage of blacks in their school districts. The index totally ignores the logistical problem involved in desegregating Los Angeles, a school district that probably encompasses a larger area than any other in the United States. Moreover, because the Taeubers' Index sets up a goal of the same percentage blacks in each school as in the school district, school systems with a black population over the fiftieth percentile are expected to work toward predominantly black schools, this often results in stagnation since in most school districts it is politically unfeasible to create and maintain predominantly black integrated schools.

An Index of "Feasible" Desegregation

An index that is much more practical in its criterion for integration has as its major premise that there is a "politically feasible" racial balance beyond which school systems should not be expected to go. It avoids the implication that school systems with large black populations and very little school integration are necessarily more racist than school systems with very small black populations and a higher level of integration.

The limitations imposed by the proportionate size of the black population are more social and political than they are educational. When someone says that the schools of Newark cannot be desegregated because there are not enough whites, (Newark's school population is 72 percent black), he or she does not mean that to rearrange pupils so that every school was exactly 72 percent black is educationally unsound, but rather that such a plan would be politically and socially unfeasible. We know very little about what black-white ratios are either optimal or tolerable from an educational viewpoint; and it is likely that the optimal ratio varies with grade level and with local conditions. But the social constraints are real, and to argue that the school officials of Newark should attempt total desegregation at this time is foolish. On the other hand, to say that a school official should do nothing because total desegregation is impossible is a more serious error.

Thus we need a scoring system which gives a maximum score to the city which has done as much as it should do. This means we need

assumptions about what is good, and what is practical. The assumptions we have made are:

1. That blacks benefit from attending schools which are over 50% white, but there is no additional benefit as the % white increases beyond 70%.
2. That white students benefit from interracial contact, and a school must be at least 5% black to provide these benefits.
3. Social and Political constraints make it inadvisable to bring black students into all-white schools in excess of 30% of the enrollment. This is a conservative assumption. A number of school systems have found that schools which are half black are viable as desegregated schools, and there is no educational research which demonstrates that a 70% white school is superior to a 50% white school. However, it seems likely that we were to propose a figure below 70% white, many school administrators and white leaders would object, and their objections might prove to be sound. On the other hand, it seems to us very unlikely that a seventy-thirty white-black ratio would be objectionable to educators. Since one of the purposes of this exercise is to set realistic goals for school systems, it is better to err on the conservative side.
4. There is no reason to reassign students who are already in desegregated settings, and no reason to thinly disperse black students through a large number of white schools merely to increase the number of whites benefitting from desegregation.

Taking these five assumptions together, this means that total desegregation should mean the reassignment of black students out of predominantly black schools and into white schools to create seventy-thirty racial ratios, until either (a) there are no longer any black students in predominantly black schools, or (b) there are no longer any white students in schools that are less than 30% black.

To meet this goal, certain costs would need to be paid: transportation would need to be provided, and temporary additions added to some buildings in white areas if the school system wishes to avoid transporting whites into previously black schools located in the ghetto. In some cases, the distances between white and black schools may be too great, but we think that this argument is exaggerated: New York City, the largest school system, has certainly been able to achieve a considerable amount of desegregation.

The most persuasive evidence that these goals are conservative is that northern school systems have already "exceeded their quota" of desegregation. Berkeley's school population is over 30% black, but this has not deterred the school system from placing every black student into schools which are at least 48% white. Conversely, Cambridge, Massachusetts' schools are only 14% black; if these students were assigned to the minimum number of integrated schools, the entire black student population could be contained in a half-dozen schools, each 30% black, and three-fifths of the white students could remain in

segregated schools. In fact, Cambridge's black students are more widely dispersed, and only one-quarter of the white students are in schools less than 5% black. There are other examples of school systems in the north which have exceeded the guidelines laid out here, and a very large number of southern school districts have gone farther than these assumptions would require.

The Computational Formula we have used gives an index of desegregation which represents the proportion of students who could be desegregated (under our assumptions) who are in desegregated schools.

Let

$$\left[\text{number of blacks now in schools less than 50\% white}\right] = B_S$$

$$\left[\text{number of blacks in 50\% + white schools}\right] = B_I$$

$$\left[\text{number of whites now in 95\% + white schools}\right] = W_S$$

$$\left[\text{number of whites now in schools less than 95\% white}\right] = W_I$$

$$\left[\text{Total number of White Pupils}\right] = W_T = W_I + W_S$$

$$\left[\text{Number of additional whites who could be in schools less than 95\% white}\right] = W_{dI}$$

$$\left[\text{Number of additional blacks who could be in schools over 50\% white}\right] = B_{dI}$$

An Example: Chicago

Let us present in detail the calculations for one city - Chicago. Chicago, according to the 1971 HEW figures, had 185,300

white students and 318,900 blacks. Fifty-one thousand eight hundred, or 28% of the whites were in schools which were at least 5% black, while 14,900, or 4.7%, of the black students were in predominantly white schools. The question is, how many of the black and white students could be integrated? If all 185,000 white students were in schools which were exactly 30% black, $0.30/0.70 \times 185,000$ or 79,500 blacks would be in school with them. Since only 14,900 blacks are now in predominantly white schools, this means an additional 79,500 - 14,900 = 64,600 blacks could be desegregated. This is B_{dI} and indicates that a complete integration plan could integrate only 24.9% of all black students. On the other hand, all of the 133,500 whites in virtually all-white schools could be integrated, since to do so would require that $3/7 \times 135,500 = 57,200$ blacks be integrated with them, and there are more than this number of blacks now in predominantly black schools. Thus the possible gain in integration is 133,500 whites + 64,600 blacks = 198,100 students. Since only 66,700 students are now in desegregated schools, we can think of the Chicago system as having

$$\frac{66,700}{198,100+66,700} = 25.2\% \text{ of the possible desegregated students in desegregated schools.}$$

It should be pointed out that as low as this 25% seems to be (and it is one of the lowest figures we computed) it is not as low as it would be if no effort had been made to desegregate schools; many of the 67,000 desegregated students are in desegregated schools because of voluntary transfers of black students to white schools.

The Equations

Expressed formally, in the notation given above, the overall index of desegregation D is the ratio of present integration to possible integration,

$$D = \frac{W_I + B_I}{W_I + B_I + W_{dI} + B_{dI}}$$

in this formula

W_{dI} is the smaller of either

(1) (W_s) or

(2) $(7/3 \times B_s)$,

since only 7 whites can be desegregated for every three blacks available for reassignment from segregated schools and B_{dI} is the smaller of

(1) (B_s) or

(2) $(3/7 \times W_T - B_T)$,

since the total number of blacks who could be integrated cannot exceed 3/7 of the white enrollment.

Table 2 gives the data for the ninety-one school systems. The reader may wish to use the Chicago example given above as a guide to understanding the table. The table indicates a number of interesting points. First, the table suggests that a good deal of segregation is the result of the confinement of blacks to the central cities. In thirty-eight of the cities, "complete" desegregation (under the assumptions

Table 2 DESEGREGATION INDICES FOR 91 CITIES

City	Total Students in District	% black students	% blacks in predom. white schools		% whites in school with blacks		No. of students actual		in deseg. school additional students possible to deseg.		feasible desegregation Index
			actual	possible	actual	possible	black	white	black	white	
Large cities over 35% Black											
Newark, N. J.	79,661	72.0	8.6	8.6	100	100	4,943	9,820	0	0	100
New York, N. Y.	1,151,715	35.0	47.6	47.6	83.8	100	191,676	355,691	0	68,727	90.3
Washington, D. C.	141,427	95.2	.91	1.73	100	100	1,230	5,450	1105	0	85.8
Buffalo, N. Y.	68,236	39.7	38.7	62.4	85.4	100	10,507	33,730	6416	5,757	78.4
Pittsburgh, Pa.	70,537	40.6	23.8	62.6	70.6	100	6,824	29,585	11126	12,298	60.8
Baltimore, Md.	190,735	68.2	9.6	20.0	65.4	100	12,418	39,722	13614	20,020	60.0
Detroit, Mich.	283,129	65.0	6.9	21.9	65.1	100	12,619	61,286	27712	32,919	55.0
Philadelphia, Pa.	273,458	61.2	9.1	24.7	49.0	100	15,202	47,314	26199	49,288	45.3
Indianapolis, Ind.	102,734	37.8	23.3	70.6	48.9	100	9,042	31,234	18137	32,697	44.1
Cincinnati, O.	79,629	45.3	13.2	51.7	49.9	100	4,758	21,718	13905	21,830	42.6
St. Louis, Mo.	107,986	67.8	2.2	20.1	40.9	100	1,608	14,078	13128	20,307	31.9
Kansas City, Mo.	68,495	52.1	9.7	39.5	33.9	100	3,468	11,114	10605	21,724	31.2
Chicago, Ill.	568,922	56.1	4.7	24.9	28.0	100	14,887	51,814	64536	133,507	25.2
Cleveland, O.	148,854	57.3	4.6	30.2	26.1	100	3,949	15,688	21813	44,424	22.9

Large Cities under 35% black	Total Students in District	% black students	% blacks in predom. white schools actual	% blacks in predom. white schools possible	% whites in school with blacks actual	% whites in school with blacks possible	number of students in deseg. sch. actual black	number of students in deseg. sch. actual white	addt. stud. poss. todeseg. black	addt. stud. poss. todeseg. white	Deseg. index
San Francisco, Ca.	83,584	30.4	78.3	78.3	99.9	100	19,890	28,339	0	0	99.9
Albuquerque, N. M.	85,446	2.5	89.1	100	18.4	19.5	1,918	9,094	235	548	93.4
Las Vegas, Nev.	73,745	12.9	69.0	100	70.9	82.2	6,551	43,306	7948	6879	83.5
Minneapolis, Minn.	65,201	9.7	70.7	100	29.7	37.4	4,490	16,531	1861	4336	77.7
Seattle, Wash.	76,844	13.6	62.7	100	50.3	65.4	6,536	30,217	3896	9091	73.9
Denver, Col.	94,840	15.7	59.6	100	52.3	76.9	8,884	29,923	6017	14040	71.8
Portland, Ore.	72,694	9.8	57.2	100	23.3	34.5	4,065	14,752	3038	7091	65.0
San Diego, Calif.	128,975	12.8	47.9	100	31.8	52.6	7,859	30,552	8550	19950	57.4
Tulsa, Ok.	75,080	14.1	42.8	100	23.3	46.4	4,544	14,322	6072	14168	48.2
Columbus, Oh.	110,725	28.2	28.1	100	42.1	100	8,788	33,204	22498	45766	38.1
Oklahoma City	68,840	23.4	23.1	100	35.5	90.3	3,730	18,730	12397	28873	35.2
Milwaukee, W.	131,815	28.0	16.1	100	30.1	100	5,941	26,851	30949	62467	26.0
Los Angeles, C.	634,050	24.9	15.9	82.1	23.2	100	25,106	70,188	104341	232856	22.1
Medium-size cities over 20% black											
Rochester, N. Y.	44,152	35.7	55.3	71.0	93.4	100	8,711	24,346	2464	1730	88.7
Springfield, M.	30,954	23.5	67.6	100	92.9	100	4,905	20,016	2355	1531	86.5
Jersey City, N. J.	39,256	44.6	27.6	36.5	69.3	100	4,833	10,328	1559	4587	71.2
Kansas City, K.	34,224	32.8	31.6	82.8	74.5	100	3,543	16,146	5750	5538	63.6
Flint, Mich.	45,236	42.0	24.6	57.3	64.0	100	4,674	16,232	1204	9160	57.7
Grand Rapids, Mich.	34,256	23.8	44.3	100	57.4	99.6	3,614	14,369	4536	10586	54.3
Gary, Ind.	45,332	67.5	5.4	15.0	60.8	100	1,643	6,511	2947	4199	53.3
Dayton, O.	55,041	42.7	12.4	57.2	58.5	100	2,906	18,347	10528	13001	47.5
Louisville, Ky.	50,440	48.8	12.7	44.9	54.3	100	3,120	13,994	7931	11792	46.5
Akron, O.	55,570	27.8	33.7	100	46.9	100	5,208	18,743	10246	21200	43.2
Toledo, O.	62,746	27.4	27.9	100	48.7	100	4,801	21,242	12394	22338	42.8

Medium-Sized Cities Under 20% black	Total Students in District	% black students	% blacks in predom. white schools		% whites in schools with blacks		No. of students in deseg. schools		add'l students possible to deseg.		deseg. index
			actual	possible	actual	possible	black	white	black	white	
Wichita, K.	59,868	15.5	100	100	98.8	98.8	9274	48,250	0	0	100
Tacoma, Wash.	35,935	10.9	92.0	100	80.5	82.9	3602	24,535	315	735	96.4
Sacramento, Ca.	49,658	16.3	93.7	100	85.2	89.0	7560	26,630	510	1190	95.3
Lansing, Mich.	32,994	13.0	87.6	100	73.9	78.6	3782	19,416	535	1248	92.9
Charleston, W. Va.	52,617	6.6	87.5	100	30.5	32.5	3017	14,436	433	1010	92.6
Colorado Spgs. Col.	34,426	6.1	82.6	100	30.6	33.6	1732	8,808	365	852	89.6
San Bernardino	36,502	15.4	77.6	100	90.4	100	4358	20,848	1256	2223	87.9
St. Paul, Minn.	49,621	6.5	73.1	100	25.9	30.5	2356	11,433	867	2023	82.7
Evansville, Ind.	33,012	9.0	60.1	100	51.8	61.0	1777	15,537	1182	2758	81.5
Racine, Wisc.	31,834	12.5	67.1	100	50.6	62.2	2670	13,301	1309	3054	78.5
Des Moines, Iowa	44,340	8.4	57.6	100	28.4	37.8	2137	11,404	1571	3736	71.8
Fort Wayne, Ind.	43,822	15.5	51.7	100	55.3	76.3	3517	20,110	3280	7653	68.4
Rockford, Ill.	42,133	12.8	55.7	100	37.0	52.4	2999	13,408	2386	5567	67.4
South Bend, Ind.	34,361	18.6	49.4	100	49.8	76.7	3148	13,940	3228	7532	61.4
Phoenix, Ariz.	40,189	11.7	67.5	100	17.5	31.6	3171	4,398	1526	3556	59.8
Lexington, Ky.	36,112	17.8	51.7	100	42.2	69.8	3321	12,494	3099	8169	58.4
Omaha, Nebr.	63,931	18.9	32.5	100	30.9	68.6	3918	15,532	8153	18996	41.7

Small Cities over 20% black	Total Students in District	% black	% blacks in predom. white schools actual	% blacks in predom. white schools possible	% whites in school with blacks actual	% whites in school with blacks possible	No. of students in deseg. schools black	No. of students in deseg. schools white	add'l students possible to deseg. black	add'l students possible to deseg. white	Deseg. Index
Berkeley, Calif.	14,985	45.0	77.8	77.8	100	100	5,194	6,488	0	0	100
Pontiac, Mich.	21,286	37.3	99.0	99.0	100	100	7,859	12,277	0	0	100
Providence, R. I.	24,151	21.4	100	100	100	100	5,172	18,554	0	0	100
Pasadena, Calif.	27,547	35.5	95.1	95.1	99.7	100	9,299	13,806	0	42	99.8
Bridgeport, Ct.	24,849	33.8	78.5	78.5	98.0	100	6,589	11,360	0	235	98.6
Passaic, N. J.	8,573	31.7	85.2	85.2	83.5	100	2,312	2,702	0	533	90.4
New Haven, Ct.	22,247	57.0	24.7	25.5	86.8	100	3,128	6,544	103	996	89.8
Camden, N. J.	20,382	61.5	14.2	16.7	89.6	100	1,781	4,364	307	508	88.3
Paterson, N. J.	27,149	48.8	26.8	28.8	81.9	100	3,550	6,424	0	1421	87.5
Hartford, Ct.	28,682	48.6	23.4	27.6	85.1	100	3,253	7,629	590	1338	85.0
Warren, O.	14,186	23.4	53.9	100	92.2	100	1,793	9,932	1533	839	83.2
Stamford, Ct.	20,730	20.9	76.6	100	82.5	97.9	3,317	12,668	1016	2370	82.5
Peoria, Ill.	25,410	20.6	64.5	100	84.0	100	3,383	16,798	1864	3203	79.9
Waterbury, Ct.	17,998	20.2	61.6	100	82.8	100	2,240	10,662	1397	2210	78.2
Wilmington, Del.	15,327	79.8	1.3	9.7	100	100	162	2,759	1020	0	74.1
Syracuse, N. Y.	28,521	25.7	57.2	100	74.5	100	4,198	15,773	3144	5406	70.0
E. Orange, N. J.	11,890	88.6	0	4.8	100	100	0	1,174	503	0	70.0
Lima, O.	10,310	26.9	63.5	100	64.7	96.3	1,764	4,829	1012	2358	66.2
Trenton, N. J.	17,152	69.4	2.9	14.2	83.5	100	349	3,292	1340	650	64.7
Albany, N. Y.	10,744	35.6	43.2	76.4	68.0	100	1,655	4,641	1270	2175	64.5
E. St. Louis, Ill.	23,439	82.5	3.1	8.9	74.0	100	595	2,972	1127	1045	62.2
Youngstown, O.	25,163	43.4	7.8	52.2	41.2	100	854	5,478	4858	7830	33.3
Saginaw, Mich.	22,271	36.0	11.7	66.3	23.1	100	941	2,865	4373	9535	21.8

Small cities under 20% black	Total Students in District	% black Students	% blacks in predom. white schools actual	% blacks in predom. white schools possible	% whites in school with blacks actual	% whites in school with blacks possible	number of students actual black	number of students actual white	add'l stud. possible to deseg. black	add'l stud. possible to deseg. white	Deseg. Index
Cambridge, Mass.	9,982	14.4	100	100	72.6	72.6	1,440	5,845	0	0	100
Niagara Falls, NY	17,158	18.0	100	100	78.5	78.5	3,082	10,859	0	0	100
Riverside, Calif.	26,323	8.9	100	100	82.8	82.8	2,333	16,765	0	0	100
Santa Monica	13,105	7.9	100	100	67.4	67.4	1,029	6,707	0	0	100
Erie, Pa.	20,233	14.5	93.9	100	79.0	81.4	2,752	13,653	178	415	96.5
Ann Arbor, Mich.	19,838	10.0	86.9	100	74.2	77.7	1,721	12,897	260	607	94.4
Utica, N. Y.	14,066	13.6	90.7	100	61.5	65.1	1,738	7,305	179	418	93.8
Muncie, Ind.	17,902	12.3	77.0	100	43.9	51.4	1,698	6,868	506	1181	83.6
Waukegan, Ill.	15,091	18.4	69.4	100	70.8	89.1	1,928	7,679	849	1981	77.24
Yonkers, N. Y.	29,943	13.8	69.5	100	35.6	47.9	2,878	8,474	1262	2945	72.96
Hamilton, O	14,884	10.1	60.4	100	25.6	36.0	906	3,418	594	1386	68.6
Waterloo, Iowa	18,918	13.5	56.5	100	37.2	53.1	1,439	6,072	1109	2588	67.02
Springfield, I.	23,528	11.8	40.1	100	33.7	52.5	1,112	6,955	1659	3870	59.3

we have made) would still leave some blacks in segregated schools.

There is enormous variation in the extent to which schools are desegregated. Many of the cities with very large black populations cannot accomplish any further desegregation; for example, only 8% of Newark blacks are in predominantly white schools, but this is all that could be accomplished given that 72% of Newark's school children are black (and most of the remainder are members of other minorities - only 12% of Newark's students are Anglo-American whites, and they are all in schools which are over 5% black). At the opposite extreme, school systems which have very few blacks tend to be unable to desegregate further. Albuquerque, which has never acted intentionally to desegregate its schools, still has 89% of its black students in schools which are over 50% white;[8] the low number of blacks in the system explains why desegregation is virtually complete with only 18% of the whites in desegregated schools.[9]

More interesting is the wide variation in the degree of desegregation in school systems which are neither overwhelmingly white or black. The contrast between New York City and the next two largest cities is quite striking, since New York City has five times as many blacks in desegregated schools, and three times as many whites, as do Chicago and Los Angeles combined. But differences between smaller cities are equally interesting: Bridgeport, Connecticut and Saginaw, Michigan are demographically similar; one is totally desegregated, the other the most segregated city in the sample.

When we contrast other extreme cases - desegregated San Francisco to segregated Milwaukee or Providence, Rhode Island to South Bend, Indiana - we see marked regional differences. Nearly all of the more segregated school systems are in the midwest and southwest; the desegregated ones are heavily concentrated in the northwest and northeast.

In reading the table, the reader should pay attention to the separate patterns for blacks and whites, for in some cases there are important differences. For example, St. Louis' overall score is very low, but this understates the difficulty: the number of blacks in predominantly white schools could be increased ten-fold. This no doubt reflects a discontinuation of the desegregation program which made considerable impact on the school system in the middle 1960s. To take another example, the overall score indicates that Detroit is less segregated than Philadelphia. A more complete statement is that Philadelphia's whites are more segregated, but Detroit's blacks are more segregated.

School Desegregation Action

If we had only these scores to go on, it would be impossible to tell what a city had done intentionally to produce the score they received. Table 3 shows the distribution of the total score of all our cities, except St. Louis, on our measures of school desegregation action: percent blacks moved, percent whites "reverse integrated,"

percent schools involved in desegregation action, and the presence of a court order. The total score is a cumulative score of each year from Fall 1964 through Fall 1971. (The yearly score is only an increment or change score.) The dashes represent missing data. These are cities which could produce detailed data on how many students were being moved for desegregation purposes, but did not have racial composition statistics for each school in their school district in some of the earlier years.

The distribution in Table 3 compares quite favorably with the Taeuber Index distribution in Table 1. Cities which score well on the Taeuber Index, score well on the measures of school desegregation action. Pasadena, Pontiac, Berkeley, Wichita, and San Francisco are our high scores on every measure including being under court order. Three out of five of those cities are in California, and three out of five, Pasadena, Pontiac, and San Francisco, have desegregated under court order. Other states with a majority of cities acting are Michigan, New York, Connecticut, and Oklahoma. New York City again compares quite favorably on the scale. It is just slightly below the mean and well above the median. It is obvious that New York's relatively good score on the Taeuber Index is a result of their school desegregation action although undoubtedly some is also due to residential integration. For example, Denver, which had only a slightly better score than New York on the Taeuber Index, has moved sixteen percent more students. The other large cities in our sample, seem to have initiated at least a small amount of school desegregation. Only Philadelphia,

Table 3

Ninety Cities Ranked by Total Score on Percent Black Moved, with Percent Whites "Reverse Integrated", Percent Schools Involved in Desegregation Action and Presence of Court Order

	% Black Moved	% Whites "Reverse Integrated"	% Schools	Court Order
Pasadena, Calif.	82.50	15.98	91.89	Yes
Pontiac, Mich.	67.02	20.07	92.10	Yes
Wichita, Kans.	54.10	2.53	62.61	
Berkeley, Calif.	50.40	15.92	60.04	
San Francisco, Calif.	40.40	6.18	64.01	Yes
Riverside, Calif.	38.20	0	39.98	
Providence, R.I.	36.00	0	20.83	
Ft. Wayne, Ind.	34.00	0	26.22	
Niagara Falls, N.Y.	28.80	1.46	60.70	
Waukegan, Ill.	28.00	3.72	22.72	Yes
Denver, Colo.	23.66	1.64	25.00	Yes
Springfield, Mass.	21.90	0	42.30	
Stamford, Conn.	20.00	1.42	19.21	
Sacramento, Calif.	19.98	0	28.94	Yes
Lansing, Mich.	17.00	0.08	17.18	
Bridgeport, Conn.	14.90	0	23.68	
Peoria, Ill.	14.30	0.33	42.20	
Evansville, Ind.	13.80	0	-	
Racine, Wisc.	12.30	0	12.75	
Oklahoma, City, Okl.	10.98	0.52	4.41	Yes
Las Vegas, Nev.	10.10	0.71	12.89	Yes
Seattle, Wash.	9.90	0.35	15.02	
Minneapolis, Minn.	9.70	0	16.09	
Grand Rapids, Mich.	9.40	0	10.52	
Tacoma, Wash.	9.20	0.24	15.14	
Ann Arbor, Mich.	9.00	0	8.10	
Lexington, Ky.	8.81	0.84	5.76	
Tulsa, Okl. (mean) →	8.50	0.53	9.25	Yes
New York, N.Y.	7.60	0.07	-	
San Bernardino, Calif.	7.10	0	6.66	
New Haven, Conn.	6.83	0	33.32	
St. Paul, Minn.	6.77	0	24.69	
Baltimore, Md.	6.60	1.32	-	
Buffalo, N.Y.	5.79	0	26.73	

Table 3 Continued

	% Black Moved	% Whites "Reverse Integrated"	% Schools	Court Order
Waterbury, Conn.	4.80	0	9.09	
Dayton, Ohio	3.96	0	13.03	
South Bend, Ind.	3.80	0	6.24	
Rochester, N. Y.	3.28	1.88	15.24	
Syracuse, N. Y.	3.24	0	19.98	
Warren, Ohio	2.80	0	1.74	
Rockford, Ill.	2.40	0	1.40	
Indianapolis, Ind.	2.36	0.22	5.68	Yes
Colorado Springs, Colo.	2.30	0	26.52	
Pittsburgh, Pa.	2.30	0.04	16.48	
Waterloo, Iowa (median) →	2.16	0.09	10.25	
Flint, Mich.	2.06	1.63	6.54	
Los Angeles, Calif.	1.56	0	3.07	
Toledo, Ohio	1.37	0	12.16	
Gary, Ind.	1.30	0	10.20	
Milwaukee, Wisc.	0.92	0	-	
Des Moines, Iowa	0.90	0.20	6.00	
E. St. Louis, Ill.	0.73	0	6.97	
Chicago, Ill.	0.34	0.12	1.84	
Kansas City, Mo.	0.31	0	5.05	
Detroit, Mich.	0.26	0	1.81	
San Deigo, Calif.	0.19	0	1.26	
Hartford, Conn.	0.01	0	2.63	
Cambridge, Mass.	0	0	0	
Erie, Pa.	0	0	0	
Utica, N. Y.	0	0	0	
Santa Monica, Calif.	0	0	0	
Lima, Ohio	0	0	0	
Paterson, N. J.	0	0	0	
Passaic, N. J.	0	0	0	
Wilmington, Del.	0	0	0	
Portland, Ore.	0	0	0	
Albany, N. Y.	0	0	0	
Muncie, Ind.	0	0	0	
E. Orange, N. J.	0	0	0	
Trenton, N. J.	0	0	0	
Charleston, W. Va.	0	0	0	
Yonkers, N. Y.	0	0	0	
Jersey City, N. J.	0	0	0	

Table 3 Continued

	% Black Moved	% Whites "Reverse Integrated"	% Schools	Court Order
Camden, N. J.	0	0	0	
Kansas City, Kansas	0	0	0	
Hamilton, Ohio	0	0	0	
Youngstown, Ohio	0	0	0	
Springfield, Ill	0	0	0	
Omaha, Nebr.	0	0	0	
Cincinnati, Ohio	0	0	0	
Akron, Ohio	0	0	0	
Columbus, Ohio	0	0	0	
Albuquerque, N. M.	0	0	0	
Phoenix, Ariz.	0	0	0	
Philadelphia, Pa.	0	0	0	
Newark, N. J.	0	0	0	
Washington, D. C.	0	0	0	
Louisville, Ky.	0	0	0	
Saginaw, Mich.	0	0	0	
Cleveland, Ohio	0	0	0	
	mean = 8.98 med. = 2.11	mean = .87 med. = 0	mean = 12.93 med. = 5.72	

Newark, and Washington have scores of zero and these scores, like the other zero scores, do not mean they have done nothing. It only means that whatever they did was not enough to make the affected schools, "biracial" by our definition, or happened so long ago it has been forgotten or their schools have become resegregated. In fact, most of those cities receiving a score of zero do have at least a small voluntary minority busing program.[10] The distribution also shows us that cities which score high on percent blacks moved, also score high on percent whites reverse integrated, and percent schools involved. A comparison of the scores on percent blacks moved and percent whites "reverse integrated" reveals that most cities try to avoid sending white students to black schools. Those cities, such as Pasadena, Pontiac, and Berkeley, which have "reverse integrated" a large amount of white students have done it primarily by changing a school from predominantly black to predominantly white. This is somewhat difficult to do since the school is identified as a "black" school by the community and consequently whites don't want to be assigned to it; this is true even if eventually enough will be assigned to make it predominantly white. However, changing a school from predominantly black to predominantly white is certainly easier than sending whites to a school that will remain predominantly black. Other cities such as Las Vegas and Tacoma have managed to "reverse integrate" small amounts of whites

by establishing "magnet" schools that are predominantly black. These schools have had their educational and extra-curricular programs enriched to the extent that they are able to attract whites who <u>voluntarily</u> choose to attend. However, no school district seems to have the energy or money to create and maintain more than two magnet schools. (It may also be argued that there are not enough whites interested in an enriched integrated program to fill more than two schools.)

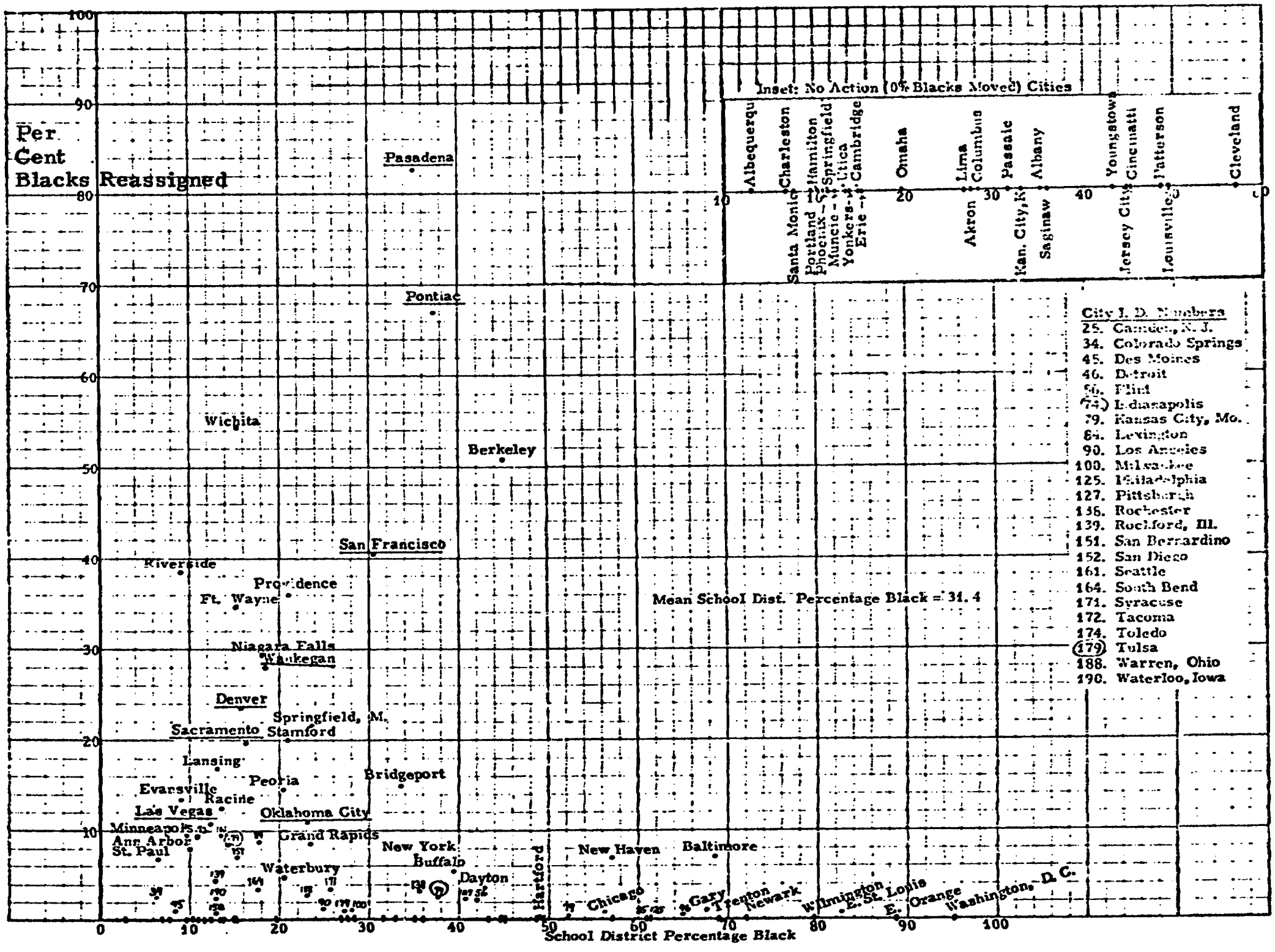
The index of feasible desegregation does not have the same kind of relationship of desegregation action as the Taeuber Index does. The reason is obvious. The desegregation action index also does not take into account what is politically feasible in terms of the proportion of the population that is black. It is simply a measure of how much school desegregation has been initiated. It is then up to the researcher to analyze the social, political, and demographic correlates of this action. The feasibility index agrees with the desegregation action scores and the Taeuber Index at the high end. Cities that have initiated a good deal of school desegregation, such as Berkeley, Pasadena, Pontiac, Wichita, etc., also have good scores (i.e. high scores) on the index of politically feasible desegregation. Where the disagreement arises is on the lower end of the scale. Cities, like newark, N. J., Washington, D. C., Passaic, N. J., Jersey City, N. J. that have not initiated any desegregation and that have highly segregated school districts receive a good score on the Index of feasible desegregation. This is because they have all the blacks in schools with whites that is politically feasible,

(e. g. it cannot create additional schools which are 30 percent black and 70 percent white.) Although their school systems are highly segregated, there is very little or nothing that can be done in these school districts.

When we entered the school district black percentage, the school district population, and court order into a multiple regression equation predicting school desegregation action (the percentage of blacks reassigned), the most important predictive variable is court order with a standardized regression coefficient (Beta) of .48.[11] The next most important variable is the school district population with a Beta of -.11, and then the percentage black of the school district student population with a Beta of -.08. Neither of the last two variables is significant, however, and if we look at a scatterplot of this relationship we can see why.

The plots in Figure 1 represent each of our cities at the point where the percentage of black students in the school district intersects the percentage of students reassigned for desegregation purposes. The underlined cities have had court ordered desegregation. The cities that have undertaken the most school desegregation seem to be in the range of 10 percent to 40 percent black, although Berkeley is an exception with 44 percent black. (Although when they initiated school desegregation in 1968, they had less than 40 percent black.) If one ignores those cities at the bottom receiving zeros on school desegregation action, there seems to be a positive relationship with

Figure 1. The Relation Between Per Cent Blacks Reassigned and the School District Percentage Black (Court Ordered Cities are Underlined or Circled)



a declining slope. (The exceptions to this are Baltimore and New Haven.) This positive relationship with a declining slope has been found in numerous other studies of race relations. The first cities in the border south to desegregate were those with an intermediate proportion of blacks. It appears that the black population is a causal factor in the amount of school desegregation action, but it is indirect rather than direct. Cities with a small proportion of blacks do not feel the pressures to desegregate in part because the black civil rights movement generally is divided and lacking the political power that comes from numbers. Cities with an intermediate proportion of blacks feel the pressures to desegregate because the black civil rights movement is more unified and has more political power. Moreover at this range, cities are still able to desegregate because whites are in a majority. However, cities with a majority black population simply find is so impossible or difficult to desegregate beyond a token amount that no amount of pressure and political power on the part of the civil rights movement could influence them to desegregate their schools. Moreover, there is some evidence that the civil rights movement in majority black cities drops the issue of school desegregation in favor of political power in black ghettos. The power of black politicians, ironically, depends to some degree on segregated neighborhoods because the solidarity of the black vote is strengthened in those situations.

What is really interesting is to see that court decisions are also related to the percentage of blacks in the school population. The courts have not ordered school desegregation in any school

district in our sample whose enrollment is less than 10 percent or more than 40 percent black. Courts are unwilling to order school desegregation within a school district where blacks are in a majority for the same reasons that school boards are unwilling to do so. They feel that it will be impossible to sustain because it will result in massive white flight. At the lower end of the percentage black, the lack of court ordered school desegregation is probably a function of the lack of unity and political power of the civil rights movement. It takes a great deal of money and political unity to sustain a court suit through the many appeals that they generally go through.

Predicting the School District Taeuber Index

In this section we will analyze the relationship between our measure of school desegregation action and the Taeuber Index of school district integration. If we look at just the correlation coefficient between the percentage of black students reassigned for integration purposes and the school district Taeuber Index, the relationship is extremely good. The correlation is -0.68. This means that the lower the percentage of blacks moved for desegregation, the higher the school district Taeuber Index (indicating more segregation). Percent blacks reassigned alone explains 45% of the variance in the School District Taeuber Index. Thus, it would seem that the method we used to compute desegregation action is probably a valid way to determine what school desegregation has been undertaken.

However, since percent blacks reassigned does not explain all the variance in the school district Taeuber Index, it is worth our while to examine the effect of other relevant variables on which we have data. We hypothesize that the school district population, the residential Taeuber Index, and the percentage of blacks in the school district would be important predictive variables. School district population seems important because those cities which do poorly on the school district Taeuber Index seem to be our larger cities, with the exception of New York ($r = 0.30$). In addition, we assume that the degree of residential integration would have an effect on the school integration score since we know that most school districts are, or were based on the neighborhood school concept. Unfortunately, we only have residential Taeuber Indices computed from the 1960 census reports. We feel, however, that these are still fairly valid since the difference between past decades has been small, and probably would be small for the decade between 1960 and 1970. (The correlation between the residential Taeuber Index and the school Taeuber Index is 0.34.) The percentage of blacks in the school district seems important because it tells us the effort necessary to desegregate, and the upper limits, practically speaking, on school desegregation ($r = 0.38$).

It is appropriate to enter these variables into a multiple regression equation because we know they are somewhat related to each other and we would want to control for that relationship. The multiple regression equation shows us that percent blacks reassigned,

the school district population, residential integration, and the percentage black in the school district together can explain 68% of the variance in school integration. Percent blacks reassigned has a relative weight (beta) of -0. 60, the school district population has a beta of 0. 19, the residential Taeuber Index has a beta of 0. 31, and the school district percent black has a beta of 0. 29. Thus the percent reassigned still has a weight at least twice that of any other variable in predicting the school district Taeuber Index.

Because we know from looking at the scatterplot that the relationship between some of these variables is rather curvilinear, we decided to try a polynomial regression equation by entering the normal values, then the square and the cube, of the school district population, the residential Taeuber Index, and the percentage of blacks in the school district. The effect of the squared and the cubed residential Taeuber Index and percentage blacks was to raise the standard error of estimate, rather than lower it, and add almost nothing to the variance explained. The best prediction equation seemed to be the normal values of percent blacks moved (beta = 0. 60), the residential Taeuber Index (beta = 0. 31), the school district percentage black (beta = 0. 29), and a squared equation of the school district population. These six variables explain 74% of the variance. Of the background (non-political) variables, population explains the most variance, residential integration second, and percent black the least.[12] The demographic prediction equation

alone (without percent blacks moved) explains 43% of the variance in the school district Taeuber Index.

We can see from this that the school district Taeuber Index is sensitive to population factors such as the school district population, the percentage of blacks in the school district, and residential integration. Our feeling is that this is primarily due not to a flaw in the Taeuber Index but to the fact that large high percentage black cities do in fact have more segregated schools. We base this judgment on the fact that our action score, percent blacks reassigned is also related to the percentage of blacks in a school district and to the size of the school district. Larger, high percentage black school districts are simply not moving large numbers of black students for desegregation primarily because these are the cities in which it is more difficult to desegregate. It is unfortunate that the Taeuber Index does not take into account "degree of difficulty" and in this sense it is unfair towards those cities that fall into the above mentioned category. However, it does serve as a uniform standard against which to evaluate the amount of school integration in a school or school district.

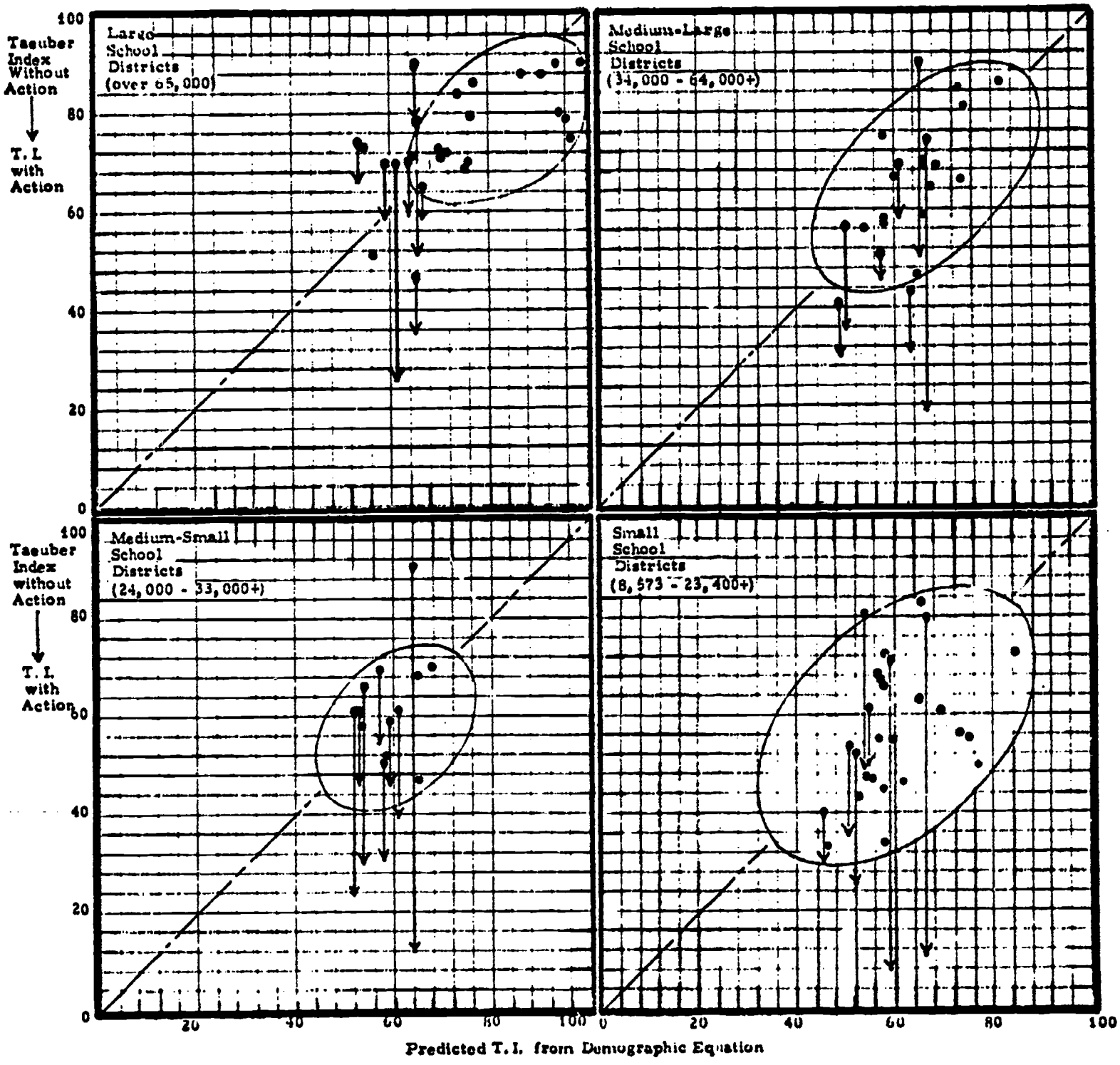
In Figure 2, we have plotted four graphs which show each of our cities at the point where their school district Taeuber Index without school desegregation action[13] (vertical axis) intersects their school district Taeuber Index predicted from a regression equation that takes into account the size, racial composition, and residential integration (horizontal axis) of a school district. Thus the dots represent an

estimate of the degree of school segregation there would be in each city if they had done nothing to integrate their schools. We have added arrows to the dots in those cities that moved at least 7 percent of their black students. The head of the arrow is at their present level of school segregation after taking an action. For clarity, we present the data in four graphs, dividing the school district by size so that the 22 largest school districts are in the upper-left, the next largest in the upper right, etc.

The upper-left figure contains within the oval drawn there a group of 16 cities, all with very high levels of segregation, none of whom have taken any significant action to desegregate. They all have population conditions that ensure that unless administrative action is taken, little integration will exist. The sixteen include some cities with very large black populations, such as Newark and Washington, some very large districts such as Los Angeles and Chicago, and some large midwestern cities like Indianapolis and Columbus. The graph also contains 8 cities which have acted to desegregate. The longest arrow, ending in a segregation index below 30, is San Francisco; its small black population, and very high degree of residential integration give it a demographically predicted index of only 61, and we estimate that even if it had not desegregated, its index would be approximately 70 - lower than any other big city to begin with. For the very large cities, the ones which have taken significant action are all to the left of the oval - all cities whose demographic constraints are not so

Figure 2

The Effect of School Desegregation Action and Demographic Characteristics on the School District Taeuber Index



severe. One of these is New York City - the arrow just to the left of San Francisco. Its desegregation index would be low without its desegregation program, because it has more white students than most big cities and less residential segregation. The other noticeably low arrowhead belongs to Las Vegas, Nevada, ending in an index of 35. Directly above it is a long arrow, representing the efforts toward integration of Denver. The two dots without arrows to the left of New York City are Portland, which has an unusually high amount of residential desegregation for a city of its size, and Albuquerque which has so few black students that its desegregation index is quite meaningless.

The figure in the upper-right includes a large number of medium-large, inactive cities, some of which are quite segregated. The three inactive cities with indexes above 80 are Dayton, Louisville, and Gary. But there are several cities which have taken significant action: the longest arrow, ending in a segregation index below 20, is Wichita; just to its left, ending just inside the oval, is Fort Wayne. (The extremely high tail on this arrow is probably an error of the sort referred to in an earlier footnote. If there were no desegregation in Fort Wayne, the segregation index would be high, but probably not above 80.) This graph is rather orderly. Most cities without desegregation plans lie reasonably close to the regression line, and all can be encompassed by the oval imposed free-hand on the figure. The other cities with desegregation plans and unusually low scores are Sacramento, Tacoma, and Grand Rapids.

The lower-left figure contains a diverse group of cities, most of whom have taken significant action to desegregate. The very long arrow is Pasadena (again, the top of the arrow is too high, indicating that so many students have been reassigned for purposes of desegregation that we are overestimating their "index without action"). Four other cities have achieved segregation indices below 40: Riverside, California, Providence, Rhode Island, Lansing, Michigan, and Springfield, Massachusetts.

The smallest school districts, in the lower right, have been slightly less active; only 7 arrows appear, while 20 cities are represented by dots. The inactive cities are very diverse; at the top of the graph is Saginaw, whose segregation index of 83 means it is more segregated than Detroit or Philadelphia. At the opposite extreme, two cities which claim not to have desegregated their schools have indexes below 35 - Cambridge, Massachusetts, and Erie, Pennsylvania. Two of the cities in this size group have taken quite significant steps to desegregate - Berkeley, California, and Pontiac, Michigan.

Overall, Figure 2 shows only what we have already learned from the regression analysis. For cities that did not act to desegregate their schools, population characteristics and residential housing patterns enable us to predict rather accurately their segregation indices. Of those cities with indices below 40, only 2 do not have desegregation plans.

Yearly Trends in School Desegregation Action

The total scores on school desegregation action give us an idea of how our cities have acted, but it cannot tell us how this has changed since the beginning of our study in the Fall of 1964. It would be naive to assume that cities acted in the same way (or for the same reason) in 1964 as they did in 1971 in meeting the challenge of school desegregation.

The histogram in Figure 3 shows the yearly frequency distribution of desegregation activity in all our cities, (again excluding St. Louis) since 1964. (We begin with 1964 because that is the first year included in our study, not because it is the first year cities acted.) There are two bars for each year, one representing the mean percentage of blacks moved in our sample in that year and the other representing the mean percentage of whites "reverse integrated" inthat year. The number at the top of each bar indicates how many cities acted that year. These are not necessarily different cities acting in each year. In 1964, desegregation occurred in only four cities. These four "bused" approximately 5% of their black students. Averaging the four with eighty-six nonactors produces an overall average movement of only 0.25% of the black students in the "average district."

Each bar is divided into voluntary school desegregation, mandatory school desegregation, and the portion that was court ordered in each of those categories. The numbers within the heavy cross-hatched area indicate how many cities were acting under court order in

each year. The numbers below each year represent the number of court orders handed down in that year. This differs from the number of school districts acting under a court order in any single year because many school districts take two or three years to fully implement a court order. Thus a city which was ordered to desegregate its schools in June of 1967, and did so partly in the Fall of 1967, and partly in the Fall of 1968, would be counted as a city acting under court order for 1967 and 1968. However, the court's decision would only be counted for 1967.

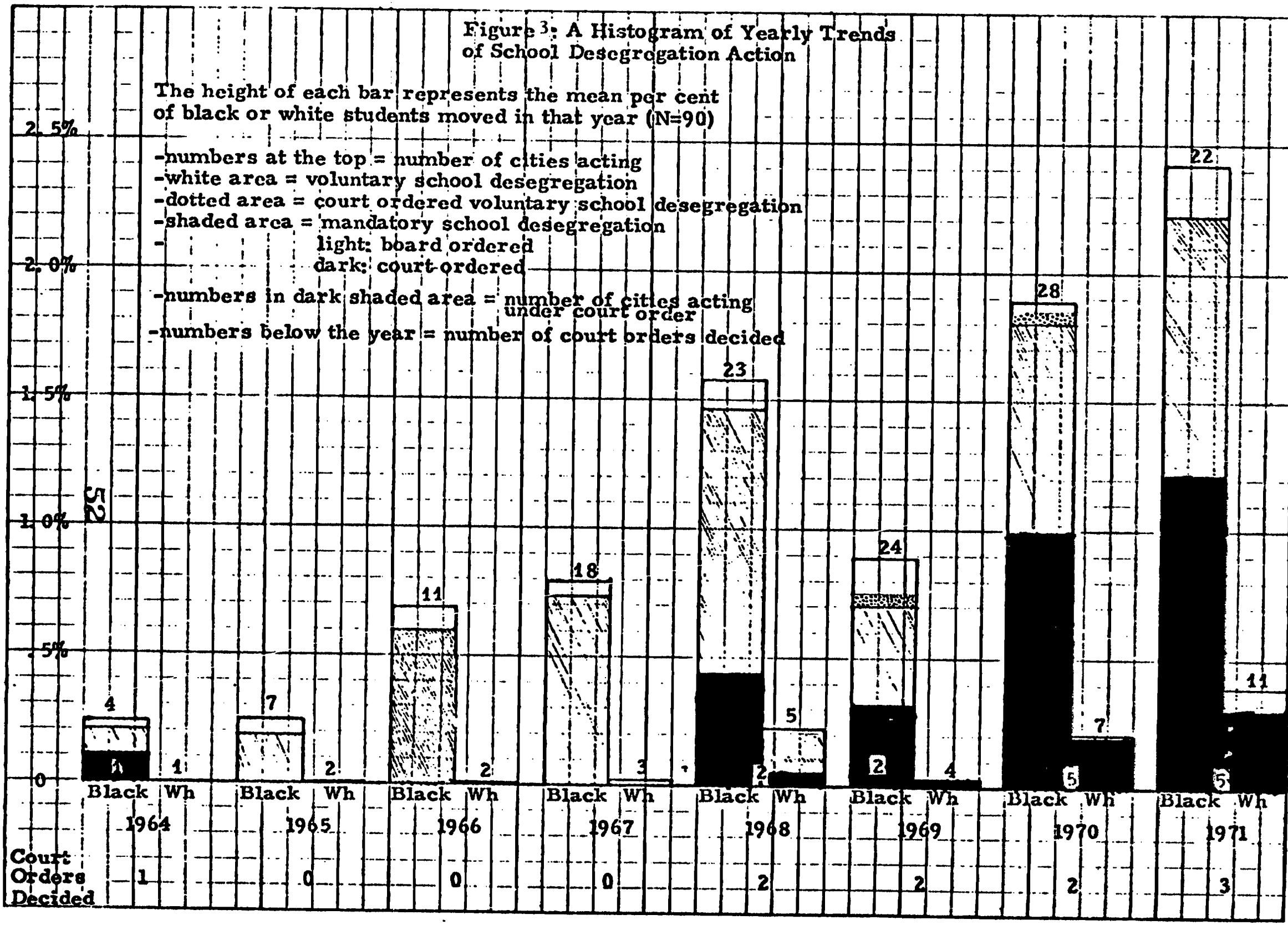
Figure 3 shows a dramatic increase in school desegregation activity among our sample of cities in 1968. Not only did the number of cities acting increase from eighteen in 1967 to twenty-three in 1968, but the average size of the action taken increased as well. However, school desegregation activity declined in 1969 to a level almost comparable to 1967, and then rose dramatically again in 1970. We are at a loss to explain the 1969 decline. The number of cities acting under court order did not decline in that year, nor did the number of court decisions ordering school desegregation. Our feeling is that the election of Richard Nixon in November 1968 may have temporarily diminished school desegregation activity in the following September, but we are unable at this point to explain why it was only temporary.

Aside from the curious year of 1969, the rest of the histogram shows a linear relationship between the increase in years and the increase in school desegregation activity. The dramatic increase in school desegregation activity in 1968 can be attributed in large part to a similar increase in court decisions ordering school desegregation.

Figure 3: A Histogram of Yearly Trends of School Desegregation Action

The height of each bar represents the mean per cent of black or white students moved in that year (N=90)

-numbers at the top = number of cities acting
-white area = voluntary school desegregation
-dotted area = court ordered voluntary school desegregation
-shaded area = mandatory school desegregation
- light: board ordered
- dark: court ordered
-numbers in dark shaded area = number of cities acting under court order
-numbers below the year = number of court orders decided

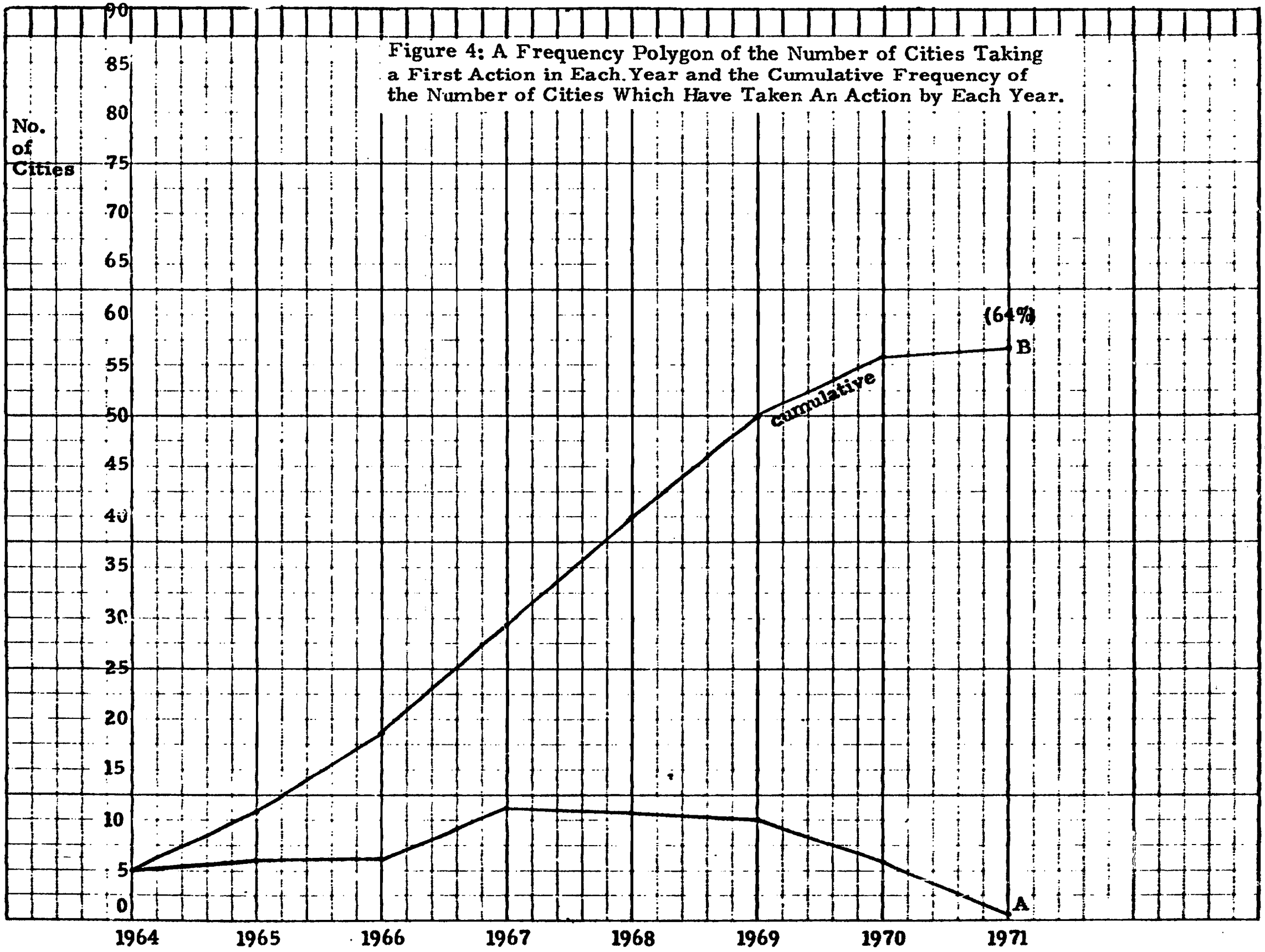


(The one court decision before 1968 involved Sacramento, California in 1964, and appears to have been an "aberration.") The increase in court decisions probably explains to a large degree the increase in whites "reverse integrated" in 1968, 1970, and 1971, since it is difficult to desegregate to a large degree, as most court orders require, without moving whites into black schools or formerly black schools.

Although there is an increase in desegregation activity in each year except 1969, the amount of activity is actually quite small if one considers our total sample of ninety cities. The percent of students moved in any one year never gets above 2.5 percent and is usually much lower. The average school desegregation action among those cities that acted does increase slightly with each year, and the number of students moved in a single action increases quite a bit over time in part due to the increase in the number of cities acting under court order. Court ordered school desegregation is usually quite extensive.

When we look at the frequency polygon in Figure 4 we get an interesting view of the trend of school desegregation action among our cities. The lower curve represents the number of cities out of ninety which took their first "significant" desegregation action in each year, while the upper curve represents the cumulative number of cities which had taken an action by each year. If we look at the simple frequency distribution (curve A), we can see that only five cities out

Figure 4: A Frequency Polygon of the Number of Cities Taking a First Action in Each Year and the Cumulative Frequency of the Number of Cities Which Have Taken An Action by Each Year.



of our sample took their first school desegregation action before or in 1964 (this may represent underreporting). The number of cities acting begins to decline in 1967 until by 1971 only one city was acting for the first time. This is despite the fact that thirty-three cities still had done nothing.

When we look at the cumulative frequency (curve B) we can see that the number of cities that had taken some desegregation action by each year has increased, but begins to level off at 1970. Almost half of our cities had taken some action by 1968 but this only increased to 64% in 1971. The frequency polygon indicates that those cities which took a school desegregation action in 1970 and 1971, increasing the total activity of those years, are cities that had taken some school desegregation action earlier. If this trend continues, we can expect no more than one or two cities that scored zero on our school desegregation action measure to undertake some school desegregation in any one year in the future. The desegregation activity will come primarily from cities that have already done something. Thus we can tentatively conclude that there seems to be a tendency for "action" cities to continue to increase their desegregation action, while "nonaction" cities continue to avoid significant school desegregation.

Summary

We have seen that school desegregation is a variable that can be measured quantitatively by utilizing both survey research questionnaires

and school racial census data. We have thus separated two different aspects of the school desegregation variable: administratively initiated school desegregation and "natural" integration. In the past, these two aspects have often been confused theoretically and methodologically.

When we ranked our sample of cities in terms of their scores on the measures of school desegregation action and the Taeuber Index of school integration, we found the same cities and the same status appearing at the top of each list. The mean and the median for our measure of school integration and school desegregation action were not exactly promising. Most of our cities would have to move 50 or more of their black student population in order to perfectly integrate their school district. This state of affairs is to a large degree the result of a high degree of residential segregation combined with a small amount of desegregation action (a mean of 9 percent and a median of 2.1 percent.)

The index of feasible desegregation agreed with the measure of desegregation action at the upper end of the scale, but not at the lower end. Cities which had desegregated a lot received good scores on the index of feasible desegregation. However, many cities that had never initiated any desegregation and were highly segregated also received good scores on the index of feasible desegregation because they were at the maximum point of possible desegregation given the limitation of no more than 30 percent black in any white school. In short, the index of feasible desegregation distinguishes between those cities that

are unwilling to desegregate and those cities that are unable to desegregate.

When we performed a series of statistical tests of the school desegregation action data, we found that percent blacks reassigned was the best single predictor of the degree of school integration in a city. Percent blacks reassigned was also negatively related in a curvilinear fashion to the percentage of blacks in a school district, as was the presence of court orders. We could explain 75% of the variance in the school district Taeuber Index with a prediction equation that included demographic variables and the percent blacks reassigned in a school district. Moreover, we could predict by a mathematical estimation of how a change in the percent blacks reassigned affects a change in the school district Taeuber Index, the point at which each of our cities would have been on the basis of demographic characteristics alone, if they had done nothing to change the racial composition of their schools.

The computation of data for each year as well as the entire period allowed us to examine the yearly trends in school desegregation action in our sample of cities. We discovered that school desegregation action increased dramatically in 1968 because court orders increased dramatically in that year. The number of cities in our sample taking a first action in each year has declined rapidly from a high point in 1967 and 1968 of 12 in each year to a low of one in 1971. We predicted that this trend would continue and that those cities that desegregate in the future will be those that have done something in

the past, unless they are court ordered. In short, although school desegregation action is still increasing, it is because the same cities are continually acting, not because new cities are making the decision to desegregate.

We can conclude on the basis of this data, that the "normal" pattern of American cities is a segregated school system. The major reason for any change in this pattern is administratively initiated school desegregation. However, some school systems are so severely constrained by demographic characteristics that they are simply unable to desegregate. The evaluation of desegregation in these varied situations has been hampered by a confusion over goals, measurement, and reporting systems. The research reported here is an attempt to overcome these obstacles to school desegregation evaluation.

Footnotes

1. This report is a part of a larger study of the political struggles surrounding the demand for school desegregation in David J. Kirby, T. Robert Harris, and Robert L. Crain, Political Strategies in Northern School Desegregation (Lexington Books: Lexington, Mass.), 1973.

2. For most of our cities, the school district was coterminous or nearly so with the city boundaries: in Phoenix, Arizona, however, there were eighteen school districts so we chose the two largest encompassing most of the elementary and high schools in central Phoenix.

3. We were unable to obtain information from the school administration in three other cities, San Bernardino, Toledo, and Chicago, but managed to contact an educational reporter who had detailed knowledge of the schools.

4. Karl F. Taeuber and Alma F. Taeuber, Negroes in Cities, (New York: Anthenum, 1965, 1972).

5. In fact, the Taeubers' Index probably has a closer "fit" for schools than it does for census tracts. A census tract can conceal residential segregation because a black ghetto can overlap several tracts or reside in one corner of one; while this study assumes that black students are not segregated in a corner of a school building. (Rigid achievement-grouping producing segregation within schools is ignored.)

6. The formula for the index is $T = 1/2$ (sum of absolute values of $N_i/N - W_i/W$). The easiest way to compute this is to mark with a check all those schools with a black or minority percentage which is larger or as large as the percentage in the district as a whole. Obtain the sum of the black population in each school marked with a check and divide by the black population of the whole school district. Obtain the sum of the white population in each school marked with a check and divide by the white population of the whole district. Subtract the result of dividing the whites from the result of dividing the blacks. Multiply by one-hundred. (Although we used the black population for our computations, it is just as easy to use the minority population.)

7. As in the measure of students moved for desegregation, non-black minority students have been excluded so that the index only refers to the segregation of blacks from whites.

8. More correctly, predominantly white schools are schools where 50% of the non-Chicano, non-Oriental, non-Indian students are white; the criterion is that desegregated schools have more whites than blacks.

9. In other cases, this means schools over 5% black; but where blacks make up less than 5% of the system's students, the percentage black for this system is used as the criterion; thus whites in Albuquerque are considered to be in desegregated schools if the school is over 2. 5% black.

10. Moreover, Santa Monica which received a zero on school desegregation action desegregated their school system in the Fall of 1972 after the end of our study.

11. Multiple regression is a statistical technique which allows us to study the relationship between a set of independent variables and a dependent variable while taking into account the inter-relationships among the independent variables. The Beta weight or standardized regression coefficient measures the strength of this relationship. The closer it comes to 1. 0, the stronger it is although sometimes it goes over 1. 00.

12. Beta weights for squared and cubed variables do not make any sense in an equation with the normal values so we do not mention them here.

13. If students are moved with perfect efficiency, an increase of one percent in the number of blacks moved reduces the school district Taeuber Index by one. But since this sort of efficiency is efficient only on paper, we are sure that this formula over-estimates the change in the degree of desegregation resulting from a desegregation action.