

URBAN SOCIAL ORGANIZATION  
AND RELATED FACTORS

by

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## ABSTRACT

This thesis has been concerned with the variations that urban areas of comparable population size evidence in respect to degrees of social organization, and has sought to quantitatively measure these varying degrees of urban social organization in a partial replication of Robert Cooley Angell's earlier study, "The Moral Integration of American Cities".

An Index of Urban Social Organization, comprised of a city's welfare effort and crime rates, was computed for twenty randomly selected Standard Metropolitan Statistical Areas. The usefulness of this index as a measure of urban social organization was validated by correlating its results to a series of items which appeared to be alternative indices of social organization.

Having demonstrated that urban areas do differ with respect to social organization, the present research also sought to isolate some of the important factors that helped determine the relative standing of the areas studied on the Index of Urban Social Organization. Two population variables, namely mobility and racial and ethnic heterogeneity, stood out as significant factors in influencing the degree of social organization of an urban area. The empirical findings of this study have largely confirmed the findings of Angell's original research.

## CHAPTER I

### INTRODUCTION: THE IMPORTANCE OF THE PROBLEM

The growth of cities and the process of urbanization of the world is one of the most impressive facts of modern times, as well as an object of continued interest and investigation by social scientists and others.

For the sociologist, this increased shift to a predominantly urban society has meant the development of a way of social life often described as "urbanism" and characterized by extensive conflicts of norms and values, by rapid social change, by increased mobility of the population, by a marked decline in intimate communication and by "looseness" of social organization or integration.<sup>1</sup>

The sociological approach to the study of the city and city life has been marked largely by attempts to emphasize the peculiar characteristics of an urban area as a particular form of human association and the central problem of the urban sociologist has been mainly concentrated on the forms of social action and organization that typically emerge

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<sup>1</sup> Louis Wirth, "Urbanism as a Way of Life," American Journal of Sociology, Vol. 44 (July, 1938), pp. 1-24.

in large, densely populated and heterogeneous metropolitan areas.<sup>2</sup>

In the varied and rich literature on the city we find numerous attempts to present a systematic theory of urbanism as a distinctive mode of human group life in cities. The researcher is impressed by the similarity in focus among the theories of such men as Louis Wirth, Max Weber, Robert Park, and others.<sup>3</sup>

Thus, Louis Wirth defines urbanism in terms of three major variables: absolute numbers of population, density of settlement, and heterogeneity of the population, which generate the urban type of social organization and life. This way of city life is viewed in terms of a continuum rather than as a rural-urban dichotomy.<sup>4</sup> It is expected that the larger and the more densely populated an urban area become, the more extreme the value of the measure of "urbanism" should be. Therefore, as urbanization (i.e., population size and density) increases, it is postulated that the following will also increase: 1) extensive norm and value conflicts, 2) emphasis on

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<sup>2</sup>For examples of this approach to urban social organization see George Simmel, "The Metropolis and Mental Life," Cities and Society: A Reader in Urban Sociology, Paul Hatt and Albert Reiss, Jr., editors (revised edition; Glencoe: The Free Press, 1957), pp. 563-574; Robert A. Park, The City (Chicago: The University of Chicago Press, 1925).

<sup>3</sup>Park, op. cit.; Max Weber, The City, translated by Don Martindale and Gertrude Neuwirth (Glencoe: The Free Press, 1958); Wirth, op. cit.

<sup>4</sup>Wirth, op. cit.

material goods, 3) feelings of impersonality with a resultant decline in intimate communication, 4) "I" feeling replacing the "we" feeling of the so-called rural society with a resultant decline of social integration and an increase in personal deviation and social disorganization.<sup>5</sup>

Though these qualities appear to be typical of the social life of large American cities, one is also aware that urban areas tend to vary in the extent or degree to which they are characterized by the so-called "urban qualities" and that they do not appear to have a degree of "urbanism" corresponding directly to their density and size as so many earlier writers have supposed.<sup>6</sup>

Some cities appear to have less norm conflict, less impersonality, less social and personal deviation than others of comparable size and density. Indexes of social disorganization, such as crime rates, vary greatly from city to city. Racial integration is a more serious problem in one southern urban area than in another.

To the sociologist, this display of variation in the organization of the social life of cities offers challenging questions for theory and research. By isolating the crucial social factors involved in determining the extent of variance in this type of urban social organization, new insight into

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<sup>5</sup>Hatt and Reiss, op. cit., p. 20.

<sup>6</sup>Footnote 3, Chapter I.

the nature of urbanism will be available as well as hypotheses for further comparative urban research.

The literature concerning variations in the social life of urban areas is sparse. The one pioneering and definitive study in this area is Robert Cooley Angell's 1951 study, "The Moral Integration of American Cities".<sup>7</sup> Dr. Angell, viewing all residents of a city as potential group members, was impressed by the apparent variation among urban areas in the degree of social solidarity or organization they presented to the world, or in his terms, "the degree to which there is a set of common ends and values toward which all the members of a large group are oriented and in terms of which the life of the group is organized."<sup>8</sup> He terms this characteristic of urban group life "moral integration" and believed that it was the showing of any city in this respect that made it, in the long run, a "good" or "bad" place for its citizens to live. This "badness" of an urban area, according to Angell, was evidenced by high crime rates, or "habitual personal integration". The "goodness" of a city was evidenced by high degrees of rational social integration, or meeting the individual citizens' needs through the city's welfare effort.<sup>9</sup>

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<sup>7</sup> Robert C. Angell, "The Moral Integration of American Cities," American Journal of Sociology, Vol. 57, #1, Part 2 (July, 1951), pp. 1-140.

<sup>8</sup> Ibid., p. 3.

<sup>9</sup> Ibid., p. 7.

We might, of course, use other sociological terms to refer to Angell's moral integration or the social cohesiveness that comes from a common orientation to the problems of group life. Concepts such as "loyalty", "solidarity", "cohesion", or "morale" seem to cover much the same ground.

Gordon W. Blackwell terms this critical condition (i.e., moral integration) of a city, the general level of civic pride or community integration.<sup>10</sup> This author sees a city as a locus for a set of basic social institutions through which a majority of the residents find it possible to meet their needs. These citizens have developed a sense of togetherness with the consequent potential ability to act together as an entity. The community integration or social organization of an urban area, in Blackwell's conception, also implies rationally directed procedures for modifying the social processes of a locality by a majority of the residents who, because of their feelings of social solidarity, can act together so that the needs of the individuals residing in the community may be more satisfactorily met.<sup>11</sup>

The present research is concerned with the preceding type of urban social organization, or moral integration, that is, the development of a sense of social solidarity

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<sup>10</sup> Gordon Blackwell, "A Theoretical Framework for Sociological Research in Community Organization," Social Forces, Vol. 33, #1 (October, 1955), pp. 57-64.

<sup>11</sup> Ibid., p. 58.

among a majority of the urban residents and the ability of these residents to act together as an entity, so that the needs of the individuals residing in the community may be more satisfactorily met. We will use the term "social organization" to refer to this process of urban social life and to replace and directly parallel Angell's use of the concept "moral integration".<sup>12</sup>

To empirically measure this abstract phase (i.e., moral integration or urban social organization) of the social life of urban communities, Angell devised an index of moral integration which was comprised of the city's welfare effort and crime rates.<sup>13</sup> He then sought to determine what factors were associated with high and low scores of individual cities on the index of moral integration. The two factors which stood out as most significant were mobility and heterogeneity of the city.<sup>14</sup> In other words, the higher the measurement of mobility and heterogeneity of an urban area, the lower that specific city scored on Angell's index of moral integration. Other factors correlated with the index of moral integration were employment of married women, spread of rentals, and rate of city growth.<sup>15</sup> Factors which showed no relation to the

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<sup>12</sup>The use of the term "social organization" does not refer here to the total structural social system of a city but rather refers to a process of group life within that system.

<sup>13</sup>Angell, loc. cit.

<sup>14</sup>Ibid., pp. 5-9.

<sup>15</sup>Ibid., p. 10.

integration index were size of city, per capita retail sales (as a measure of the prosperity of the area), church membership, and percentage of all gainfully employed persons who were clerical and skilled manual workers (as an indication of the size of the "middle class" mediating between the extremes).

In the second part of his study, Angell proceeded to intensively study four selected cities, hypothesizing that community leadership is a crucial element in the moral integration of a city, that is, in the development of social consensus as to group values, as well as to effective group efforts toward their realization.<sup>16</sup> Concluding that leadership was an important element in the moral integration or social organization of a city, Angell also cited the importance of community organizations: "The school and the church can probably exercise a powerful influence in the direction of moral integration if they will but apply themselves to the task."<sup>17</sup>

Over a decade later, Angell's "The Moral Integration of American Cities" still stands as the only sociological effort to study social organization or integration in an urban group and on a city-to-city comparative basis. His study still mediates between Wirth's theoretical generalizations towards all cities concerning "urbanism" and specific social

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<sup>16</sup> Ibid., pp. 22-114.

<sup>17</sup> Ibid., p. 27.

area descriptions of geographical portions of a city such as those of Shevky and his associates.<sup>18</sup> Angell's study also remains as one of the few efforts to empirically study social integration or cohesion in as large a human group as a modern American city.

Because it was felt that this area of urban research had been long neglected by sociologists and that the empirical testing of the concept of the degree of social integration or organization of a large human group such as an urban area might add increased knowledge to urban sociology as well as to the historical analysis of the development of cities, it was decided that a partial replication of Angell's original study was in order.

Recognizing the limited theoretical application of Wirth's thesis that numbers, density and heterogeneity produce a distinctive mode of group life in all urban areas, we are interested in investigating empirically Angell's hypotheses of urban group life:<sup>19</sup>

1. That cities of comparable size vary in their relative degree of moral integration or social organization.

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<sup>18</sup>Eshref Shevky and Marilyn Williams, The Social Areas of Los Angeles, Analysis and Typology, Berkeley and Los Angeles, California (Berkeley: University of California Press, 1949); Wendell Bell, "Economic, Family and Ethnic Status: An Empirical Test," American Sociological Review, Vol. 20 (February, 1955), pp. 45-52; Theodore Anderson and Janice Egelond, Spatial Aspects of Social Area Analysis, American Sociological Review, Vol. 26 (June, 1961), pp. 392-398.

<sup>19</sup>Angell, op. cit., pp. 3-5.

2. That this variation is reflected in the ability of the group to act as an entity, and with rational concern to meet more satisfactorily the needs of all individuals residing in the community.

3. That this degree of social organization (i.e., orientation to common values and goals, and rational concern for the individual residents' needs) is reflected in certain crucial elements inherent in the city, namely the local and public welfare efforts, and these elements may be measured empirically.

4. That it is also possible to quantitatively measure the relative degree to which the members of a social group do not behave in accord with the common values and goals of a large group and do not become oriented to the majority's goals. This is done by using an index of crime rates for each specific group or urban area.

5. That not only do cities differ with respect to the degree of social organization they possess, but certain factors that can be isolated empirically (i.e., mobility and heterogeneity) influence the degree of social organization in urban communities. It is the aim of the present study to not only demonstrate that cities of comparable size differ in degrees of social organization but to isolate some of the crucial factors that affect the degree of social organization possessed by an urban area on a city-to-city comparative basis and to discuss theoretically the probability that a factor that

varies with social organization is the cause or effect of that organization.

In summary, this thesis is a partial replication of Part I of Angell's study, "The Moral Integration of American Cities".<sup>20</sup> It is concerned with re-testing Angell's original thesis that urban areas of comparable size vary in their relative degree of social organization, as well as isolating the crucial factors that influence the degree of social organization in American urban areas. Of particular concern will be the revision and empirical testing of a number of Angell's original indexes, including the indexes of crime, welfare effort, heterogeneity, educational spread, income spread, proportion of married women in the labor force, and proportion of "middle class" persons, in the hope that more reliable indexes may be devised.

The importance of the research problem should not be underestimated. If the individual members of an urban area do have relative degrees of common social goals and values and the degree of this characteristic affects their ability to work together as a social entity and to meet each resident's needs, then low degrees of social organization imply socially dysfunctional effects both on the urban area as a whole and on its individual members (i.e., health, educational needs inadequately met, increased crime rates, suicides, etc). The determination of the relative standing of any city in urban

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<sup>20</sup>Ibid., pp. 1-140.

social organization would also perhaps stimulate the citizens of the low cities to attempt improvement of their communities and the discovery of the crucial related social factors may inspire more intelligently directed urban planning and social welfare efforts.

Of broader importance, however, is the knowledge that this type of research may contribute to the development of sociological theory. As small studies are carried out and their results compared with existing research, theory may be clarified. We might hope that any new light that is thrown on the social organization of urban areas might help explain the challenging problems of social relationships and cohesion in the very large groups that are characteristic of contemporary urban society, for it is in these large, loosely-organized groups that social cohesion or the ability of the group to act as an entity most frequently breaks down. As Angell states:

"We might well expect that significant inferences could be made to other large heterogeneous groups such as giant factories and national states. It is even possible that our theory might prove suggestive for research on problems of world order."<sup>21</sup>

It was with the preceding considerations in mind that the present problem was selected for study.

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<sup>21</sup>Ibid., p. 4.

## CHAPTER II

### URBAN SOCIAL ORGANIZATION AND ITS MEASUREMENT

A term like "social organization" is a scientific concept which points to something believed to be existent and important in understanding and in generalizing as to what happens in social groups. The next step is the development of empirical tests of its usefulness in these regards.

As already stated, Robert Angell's study of "The Moral Integration of American Cities" is considered the pioneering effort thus far to provide such a test, at least on a comparative city-to-city basis.<sup>1</sup> Angell devised an index of moral integration which was composed of two major components: the first component he called a welfare effort index which utilized the per capita local private expenditure for public welfare as evidenced by Community Chest, Inc., figures. This welfare effort index was presumed to measure empirically the intentional moral integration or rational social organization of a city and showed the relative degree of determination and solidarity of the urban population as a whole to achieve common ends or goals.<sup>2</sup>

The second part of Angell's index of moral integration was the crime index, or the actual number of criminal offenses

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<sup>1</sup>Robert C. Angell, "The Moral Integration of American Cities," American Journal of Sociology, Vol. 57, #1, Part 2 (July, 1951), pp. 1-140.

<sup>2</sup>Ibid., p. 6.

reported to the Federal Bureau of Investigation for each city.<sup>3</sup> This was considered by Angell to be a negative index or an indicator of the relative extent to which the individuals of an urban area did not behave in accord with the group consensus on values as set forth in the law. The crime scores were then combined with the welfare effort scores to produce the index of moral integration or social organization for each city studied.

To determine the validity of his moral integration index, Angell then applied it to 43 large United States cities and compared the integration ratings of these cities with such items as their financial support of public health and safety, schools, recreation, etc. All these terms, thought by Angell to be other indicators of an area's degree of social organization or integration, varied directly with his index of moral integration.<sup>4</sup> He also found a negative correlation between the index and such indicators of habitual moral integration as homicides, illegitimate births, suicides, and deaths from venereal diseases.<sup>5</sup>

Finding sufficient consistency in the relationship of his index of moral integration to all these items, Angell felt that the scores of the individual cities on the index

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<sup>3</sup>Ibid., p. 7.

<sup>4</sup>Ibid., p. 10.

<sup>5</sup>Ibid., p. 9.

of moral integration really indicated relative degrees of group solidarity and common group goals held, as well as the effectiveness of urban social organization to work as an entity in attaining them.

Mention should also be made of a previous urban study oriented to somewhat the same problem as Angell's by E. L. Thorndike, whose concern was to discover "what makes a city a good place to live."<sup>6</sup> In reaching a "goodness" score for 310 cities, he combined a total of thirty-seven items into a single index of "goodness".<sup>7</sup> These items ranged from educational opportunities provided by the public to such things as material comforts, degree of literacy, average wages, and support of the Y.M.C.A. Thorndike's items were those that he deemed "all reasonable persons would regard as significant for the goodness of life for good people in a city."<sup>8</sup> As such, he emphasized and attempted to measure individual opportunities and satisfactions, with little explicit recognition of the importance of social organization or the fact that all residents within a city were potential members of a social group.

In addition, since the Angell study was published, certain others have appeared of some relevance to our interest. Eshref Shevky and his associates, Marilyn Williams and

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<sup>6</sup>E. L. Thorndike, Your City (New York: Harcourt, Brace and Co., Inc., 1939).

<sup>7</sup>Ibid., p. 25.

<sup>8</sup>Angell, op. cit., p. 3.

Wendell Bell, have been concerned with certain social factors which they consider basic to the social stratification and differentiation of the large city.<sup>9</sup> These factors are social rank, urbanization, and segregation. Indexes of each of these social factors have been constructed and types of social areas are defined as groups of census tracts having similar configurations of scores on the three indexes.<sup>10</sup> The significance of these basic social factors has been empirically verified and the indexes used in the typology have been shown to be unidimensional measuring instruments.<sup>11</sup> However, since the use of the indexes has been restricted thus far to the description of certain structural social differentiations within a city (i.e., socio-economic rank, the degree of segregation, the degree of "urbanism"), these studies have contributed little to the understanding of social organization on a city-to-city basis. No direct mention is made by Shevky and

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<sup>9</sup>Theodore Anderson and Lee Bean, "The Shevky-Bell Social Areas," Social Forces, Vol. 40, #2 (December, 1961), pp. 119-124; Wendell Bell, "Economic, Family and Ethnic Status: An Empirical Test," American Sociological Review, Vol. 20, #1 (February, 1955); Shref Shevky and Marilyn Williams, The Social Areas of Los Angeles, Analysis and Typology, Berkeley and Los Angeles, California (Berkeley: University of California Press, 1949).

<sup>10</sup>Bell, op. cit., p. 46.

<sup>11</sup>Maurice D. VanArsdol, Jr., Santo F. Camilleri, and Calvin Schmid, "The Generality of Urban Social Area Indexes," American Sociological Review, Vol. 23, #3 (June, 1958), pp. 277-284; Maurice D. VanArsdol, Jr., Santo F. Camilleri, and Calvin Schmid, "An Application of the Shevky Social Area Indexes to a Model of Urban Society," Social Forces, Vol. 37, #1 (October, 1958), pp. 26-32.

associates as to the empirical measurement of "moral integration", "social organization", or "social solidarity" as the concept is variously termed, although it is not unlikely that the indexes might prove useful in this regard.

Another recent study deserves mention because it bears directly on Angell's choice of "community welfare effort" as an index of the relative degree of an urban area's social organization or moral integration. In an attempt to seek to reduce the complexity of urban research, Jonassen, using factor analysis, sought to isolate a few factors or fundamental unities in terms of which variations between community systems could be explained.<sup>12</sup> Using 72 variables from United States County Census Data for 88 counties in Ohio, Jonassen found that the variable "welfare" had a significant positive loading with a negative loading for something he called "atony" at the other end, forming a bi-polar factor.<sup>13</sup> The "welfare" factor was associated with the community's good health, efficiency in solving problems, ability to care for its children and a desire to sacrifice financially for public education.<sup>14</sup> "Atony" was used in the sense of "want of vital energy" or a "weakness or social disorganization" of the system which prevents the community from achieving

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<sup>12</sup>Christen Jonassen, "Functional Unities in Community Systems," American Sociological Review, Vol. 25, #3 (June, 1961), pp. 399-407.

<sup>13</sup>Ibid., p. 404.

<sup>14</sup>Ibid.

efficiency in controlling the social and physical environment in the interest of greater social and economic security and a higher standard of life.<sup>15</sup> As Jonassen states:

"A community characterized by this welfare factor probably has what Angell called moral integration to a marked degree. The underlying factor here designated as welfare (or the amount of financial sacrifice) is probably quantitatively much like moral integration with the specific meaning given to it by Angell. Communities that evidence this factor to a high degree would probably also have a high community feeling and awareness."<sup>16</sup>

Jonassen also found that an urban area characterized by a high welfare loading evidences a relative absence of crime (-.27) and some evidence of good social control, offering one empirical justification for Angell's and this study's use of a crime index as a negative measure of a city's social organization.<sup>17</sup>

It would seem, therefore, from the review of the sparse literature in the area of social organization or moral integration of urban areas that one is not totally unjustified in using some measure of community welfare effort as a positive index of that area's degree of social organization or willingness and ability to meet all human needs by rational action, and a crime index as a negative measurement of the degree of urban social organization.

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<sup>15</sup>Ibid., p. 405.

<sup>16</sup>Ibid.

<sup>17</sup>Ibid., p. 406.

### A. The Use of Indexes

Before dealing with the construction of an Index of Urban Social Organization, it would perhaps be pertinent to the present research to discuss the use of indexes and quantitative problems inherent in their use as measures of social characteristics.<sup>18</sup> Bauer defines a social index as an indirect quantitative measure of a characteristic (i.e., social) that is in itself not directly measurable.<sup>19</sup> The items of an index, therefore, are chosen by the application of judgment based on some knowledge of the relationship between the components of the index and the social characteristic being tested. Indexing, like scaling, orders a series of values on a continuum and the position on the continuum indicates the absolute or relative amount of the variable being measured. The necessary processes in devising an index that is both reliable and valid entails obtaining reliable data, carefully defining the social characteristic to be measured, appropriate weighting of the items to be included, as well as testing for the reliability and validity of the index.<sup>20</sup>

The present research, being a partial replication of an earlier study, will employ the test-retest method of

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<sup>18</sup>William Goode and Paul Hatt, Methods in Social Research (New York: Mc-Graw-Hill Book Co., Inc., 1958), pp. 232-242.

<sup>19</sup>Edward A. Bauer, "Statistical Indexes of the Social Aspects of Communities," Social Forces, Vol. 33, #1 (October, 1954), pp. 64-75.

<sup>20</sup>Goode and Hatt, op. cit., pp. 240-242.

measuring the reliability of the various indexes used. Both logical validation and independent criteria will be used to test the validity of the Index of Urban Social Organization.

#### B. Selection of Cities to be Studied

Several circumstances determined the character and scope of this research as to the size, area, and number of urban areas selected for study.

First: Because United States Census data are the richest source of comparable information available on a large number of cities, the study was centered on the year of the last decennial census, 1960. Angell also used census data (1940), and so the two studies used relatively comparable data.

Second: Standard Metropolitan Statistical Areas, as defined by the United States Census, were used as the unit of study in place of the central cities to which Angell limited himself.<sup>21</sup> The use of Standard Metropolitan Statistical Areas seemed justified for two reasons: 1) because this research wished to consider an integrated social system it was felt that the entire population in and around the city, rather than that within the legal boundaries of the city, was the more appropriate unit of study, and 2) because comparable Community Chest and local welfare figures were impossible to obtain for the central cities, being available

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<sup>21</sup>Angell, op. cit., p. 6.

for the year 1960 in units that more closely approximated those of the Standard Metropolitan Statistical Areas.<sup>22</sup>

A note should be inserted here as to the United States Census' definition of Standard Metropolitan Statistical Areas.<sup>23</sup> Each Standard Metropolitan Statistical Area, except in New England, must include at least one city of 50,000 inhabitants or two cities having contiguous boundaries and constituting, for general economic and social purposes, a single community with a combined population of at least 50,000. These cities may cut across county boundaries. In New England and some parts of the West, the Standard Metropolitan Statistical Area usually includes the county where the central city or cities are located.

Third: Since Angell limited the size of his cities to not less than 100,000 it was decided to do this in the present study. Therefore, to be included as a possible urban area, the Standard Metropolitan Statistical Area must have had a population of not less than 100,000 and not more than 500,000 in 1950.

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<sup>22</sup>These figures were obtained from the United Community Funds and Councils of America, Inc., New York, New York, and from Local Finances in Standard Metropolitan Areas, Vol. III, #6 (Government Finances), Bureau of the Census, U. S. Department of Commerce (Washington: Government Printing Office, 1958).

<sup>23</sup>1960 Final Report, U. S. Census of Population and Housing, PHC(1) Series, U. S. Department of Commerce (Washington: Government Printing Office), p. 8.

In all there were 65 Standard Metropolitan Statistical Areas meeting the above criteria. Twenty of these were selected for study, utilizing a table of random numbers.<sup>24</sup>

Angell also had one additional criterion for his city selection: that the cities selected should be "independent" in the sense that they should not be geographically close to other large cities since the social organization of a specific city might be affected by causes emanating from large near-by centers of population.<sup>25</sup> On review of our twenty randomly-selected Standard Metropolitan Statistical Areas, only one area, Gary-Hammond-East Chicago, Indiana, appeared to be in close physical proximity to another large center of population (i.e., Chicago, Illinois). However, it was decided to include Gary in the study as representative of a northern section of the United States.

### C. The Urban Social Organization Index

#### 1. Welfare Effort Index

Assuming that those cities that scored high on one characteristic presumably symptomatic of social organization would also score high in other characteristics that should be symptomatic of it, Angell devised both a welfare effort

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<sup>24</sup> Those Standard Metropolitan Statistical Areas selected can be found in Table 1, p. 29.

<sup>25</sup> Angell, op. cit., p. 13.

and a crime index, later combining the two into an index of moral integration.

Angell's final index of welfare effort was based on Community Fund figures and took into account the degree of achievement of the campaign goal, the proportion of local families giving, and the economic sacrifice involved.<sup>26</sup> The hypothesis behind this welfare effort index was that in cities where moral integration or social organization was high there would also be a strong private welfare effort, since the people would have a sense of responsibility for the well-being of their neighbors.<sup>27</sup> The greater the moral integration, the more the citizens would sacrifice their private interest for the public interest.

In the present study, our Welfare Effort Index, while assuming Angell's rationale of welfare sacrifice, differed in some aspects from his, consisting of two, rather than one parts. Community Fund Campaign results of 1960 were obtained for the twenty Standard Metropolitan Statistical Areas to be studied and using the amount raised and population covered, per capita amounts were computed.<sup>28</sup> These figures formed an index of per capita private joint financing of the welfare effort for each Standard Metropolitan Statistical Area, or Part A of our Welfare Effort Index.

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<sup>26</sup>Appendix 1, Section A, p. 79.

<sup>27</sup>Angell, op. cit., p. 6.

<sup>28</sup>Appendix 1, Section B., pp. 79-81.

The use of Community Fund figures as a measure of urban social organization has also been studied by C. Arnold Anderson and reported in an article entitled "Community Chest Campaigns as an Index of Community Integration".<sup>29</sup> In a study of some 108 cities, Anderson noted that neither the income level of a city nor the relative predominance of high or low economic families had much relationship to the dollars per capita given to the Chest Campaign.<sup>30</sup> Rather, those cities that were most successful (i.e., high per capita amount of funds raised) were successful to the degree that they elicited pledges from every citizen. As Anderson states: "The critical condition is the general level of civic pride, or community integration. Presumably, the more 'integrated' cities will obtain more efficient Chest executives and will select more capable directors of the annual drive."<sup>31</sup>

Inasmuch as Anderson's "community integration" seems to parallel our definition of "urban social organization" and is a key factor in the success of Community Fund campaigns, the results of this inquiry would seem to justify the use of Community Fund figures as a measure of urban social organization and Part A of our Welfare Effort Index.

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<sup>29</sup>C. Arnold Anderson, "Community Chest Campaigns as an Index of Community Integration," Social Forces, Vol. 33, #1 (October, 1954), pp. 76-81.

<sup>30</sup>Ibid., p. 80.

<sup>31</sup>Ibid., p. 81.

Part B of the Welfare Effort Index in the present study included the per capita local public funds for general expenditures by the twenty Standard Metropolitan Statistical Areas. It was hoped that specific figures for local public expenditures for welfare could be obtained, but these figures were generally unavailable and, when available, not comparable on an area-to-area basis. A decision was made to use the 1958 United States Department of the Census Standard Metropolitan Statistical Area local finance figures, since 1960 figures were unavailable for these areas.<sup>32</sup> State and federal funds were subtracted from the total general revenue for each Standard Metropolitan Statistical Area, leaving us with the amount of local revenue spent on general expenditures. Per capita amounts using the 1960 population figures were computed for each of the twenty Standard Metropolitan Statistical Areas, giving us an index of per capita public local revenue spent for general expenditures.<sup>33</sup> Since "general expenditures" included the census definition of such items as education, public welfare, hospitals, police, health, parks and recreation, it was felt that local funds for these categories paralleled the degree of local public financial sacrifice for welfare.<sup>34</sup>

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<sup>32</sup>Local Finances in Standard Metropolitan Areas, p.28.

<sup>33</sup>Appendix 1, Section B, p. 79.

<sup>34</sup>Appendix 1, Section B, p. 80.

Part A, per capita private joint financing of the welfare effort, and Part B, per capita local public revenue, for each Standard Metropolitan Statistical Area were added, divided by two, and converted to percentile rankings from 1% to 100%, to form one Welfare Effort Index.<sup>35</sup> The higher the Standard Metropolitan Statistical Area's percentage on this index, the higher its relative standing in per capita amounts allocated to local welfare. It was felt that this Welfare Effort Index was more reliable than that used by Angell, since it included measures of both private and public attempts to finance the areas' residents' needs through both public and private "intentional" social organization.

## 2. Crime Index.

Since we could find no other adequate or reliable positive index of urban social organization, it was decided, like Angell, to construct a negative one from the Federal Bureau of Investigation's crime statistics. The assumption behind using a Crime Index was that the more the people of a community are knit together in a cohesive and socially organized order the more values and goals they will have in common and the less they will violate one another's persons or property.<sup>36</sup>

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<sup>35</sup> Appendix 1, Section B, p. 81.

<sup>36</sup> Angell, op. cit., p. 7.

A Crime Index was constructed using the 1960 total criminal offenses reported to the police per 100,000 population for each Standard Metropolitan Statistical Area.<sup>37</sup> These rates were converted to percentages and the percentages reversed, so that high scores on the Crime Index indicated low relative amounts of criminal offenses.<sup>38</sup>

The present Crime Index differed from Angell's final crime index in the following respect: Angell computed a 3-year average of crimes, weighting homicides two times as highly as burglaries and using only homicides and burglaries.<sup>39</sup> However in the present study all criminal offenses are part of the Crime Index and no weighting of specific offenses has been included.

It should be noted here that the Federal Bureau of Investigation crime rates are based on the 1960 Census Standard Metropolitan Statistical Area population figures and so populations are comparable. The reliability and validity of the Uniform Crime Reports have also improved since Angell's study, and although each local law enforcement agency remains wholly responsible for reporting all criminal offenses to the Federal Bureau of Investigation, a more standardized

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<sup>37</sup>1960 Uniform Crime Reports, Federal Bureau of Investigation, U. S. Department of Justice, Washington, D. C., July 24, 1961.

<sup>38</sup> Appendix 1, Section D, p. 82.

<sup>39</sup> Appendix 1, Section E, p. 83.

reporting system has been instituted.<sup>40</sup> The F.B.I. rates remain, therefore, as the most valid, reliable and comparable figures upon which to construct a Crime Index.

### 3. Combined Index of Urban Social Organization

The next step in the construction of an Index of Urban Social Organization was to combine the Welfare Effort Index with the Crime Index by adding the Welfare Effort Index scores of each Standard Metropolitan Statistical Area to the score on the Crime Index and dividing by two.<sup>41</sup> The two constituents of the Index of Urban Social Organization were weighted equally in this study since it was believed that one, the Crime Index, was as reliable and valid as the other, the Welfare Effort Index, and we had no present basis upon which to hold one to be more important than the other. However, in Angell's original study, the crime scores were given twice the weight of the welfare effort scores, in his inclusive index of moral integration.<sup>42</sup> In addition, the Index of Urban Social Organization consists of two different elements. One, the Welfare Effort Index, is a measure of the rational and intentional group problem-solving process of individuals, which presumably indicates

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<sup>40</sup>For an explanation of this reporting system, see Uniform Crime Reporting Handbook, Federal Bureau of Investigation, U.S. Department of Justice, Washington, 1962, pp. 3-15.

<sup>41</sup>Appendix 1, Section F, p. 83.

<sup>42</sup>Appendix 1, Section E, p. 83.

a lack of social control. Although one may affect another, they operate in two relatively separable spheres of social action.<sup>43</sup>

D. Empirical Verification of  
Urban Differences in Social Organization

Scores on the Welfare Effort Index were determined for twenty Standard Metropolitan Statistical Areas and are shown in Table 1. Part A of the Welfare Effort Index shows the per capita private joint financing of the welfare effort for each Standard Metropolitan Statistical Area and its percentile ranking. Part B of the Welfare Effort Index is the per capita amount of local public revenue spent on general expenditures for each Standard Metropolitan Statistical Area and its percentile ranking. Column five of Table 1 is the Welfare Effort Index, which combines Part A and Part B for each Standard Metropolitan Statistical Area, in percentile rankings. A high percentile ranking on the Welfare Effort Index indicates a large per capita amount spent on private welfare and local public general expenditures. The large discrepancy in Paterson between the local private per capita financing and local public financing should be noted. This discrepancy could be due to the fact that the Red Cross campaign is not included in the Community Chest figures. It makes some difference whether the campaign includes the Red

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<sup>43</sup> Angell, op. cit., p. 13.

Table 1. Welfare Effort in Twenty Standard Metropolitan Statistical Areas.

Standard Metropolitan Statistical Area	Part A		Part B		Welfare Effort Index
	Per Capita Private Joint Financing of Welfare Effort		Per Capita Local Public Revenue		
	Dollars	Percent	Dollars	Percent	Percent <sup>b</sup>
Baton Rouge, La.	3.29	39.6	64.95	11.9	12.7
Des Moines, Iowa	6.47	100.0	116.48	80.6	83.6
El Paso, Texas	2.46	25.8	56.00	1.0	1.0
Hammond-Gary-East Chicago, Indiana	4.64	62.5	86.99	41.3	43.1
Hartford, Conn.	5.25	72.3	104.01	64.0	66.0
Knoxville, Tenn.	3.30	39.8	69.03	17.4	18.0
Nashville, Tenn.	3.89	49.6	74.95	25.3	26.5
New Bedford, Mass.	3.13	37.0	94.52	51.4	50.9
New Haven, Conn.	5.64	78.8	106.85	67.8	70.2
Paterson-Clifton-Passaic, New Jersey <sup>a</sup>	.91	1.0	118.21	82.9	78.8
Peoria, Illinois	5.24	72.2	96.33	53.8	56.0
Phoenix, Arizona	2.66	29.2	79.20	30.9	30.4
Reading, Pa.	4.18	54.5	75.68	26.2	27.8
Scranton, Pa.	4.87	66.0	63.71	10.1	13.1
Spokane, Wash.	3.35	40.7	73.32	23.1	23.6
Springfield-Chicopee-Holyoke, Mass.	5.12	70.2	110.98	73.3	74.9
Tampa-St. Petersburg, Florida	3.72	46.8	85.19	38.9	39.5
Trenton, N.J.	4.93	67.0	130.99	100.0	100.0
Utica, N.Y.	5.25	72.3	97.37	55.2	57.4
Wichita, Kansas	5.01	68.3	124.42	91.2	92.2

<sup>a</sup>Paterson's figures for the Community Chest do not include the Red Cross Drive.

<sup>b</sup>Highest percentile means highest per capita welfare effort.

Cross, since about 15% to 20% more money would be raised by the Community Chest campaign if the Red Cross were included.<sup>44</sup>

Inspecting Table 1, the observer sees that, for the most part, there is a tendency for the percentile rankings of per capita local private funds to increase as per capita local public funds increases, for each Standard Metropolitan Statistical Area. However, the relationship between the two series (local private and public financing of the welfare effort) is only moderate by the Pearson product moment correlation ( $r = +.40$ ). This means that the two parts of the Welfare Effort Index have some element in common, presumably the state of urban social organization of each of the Standard Metropolitan Statistical Areas, but that other and differing elements are also included in them.<sup>45</sup> One factor may be that in the computation of Part B of the Welfare Effort Index or local public revenue for welfare, the specific local public funds for public welfare were unavailable and figures based on local revenue for "general expenditures" were used. However, in Angell's pilot study, he first used both private and public funds and the two parts of his welfare effort index had a similar correlation ( $r = +.46$ ).<sup>46</sup>

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<sup>44</sup> From information supplied by Arthur H. Jesse, Associate Director, Research and Statistics Division, United Community Funds and Councils of America, Inc., New York, New York.

<sup>45</sup> Angell, op. cit., p. 8.

<sup>46</sup> Ibid., p. 13.

In Table 2, we find the scores for each Standard Metropolitan Statistical Area on both the Crime Index and the Welfare Effort Index, as well as the Index of Urban Social Organization. The Pearson product moment correlation between the Welfare Effort Index and the Crime Index is .32, as compared with Angell's correlation of .39.<sup>47</sup> This means, again, that the two series, Welfare Effort Index and Crime Index, have an element in common, namely, the state of social organization, but that other and differing elements are also included in them.

One factor that may be lessening the correlation between the two, as Angell notes, is a failure of the figures to represent the real situation in the several urban areas studied.<sup>48</sup> For example, inaccuracies in local crime reporting to the Federal Bureau of Investigation, in spite of standardized reporting procedures, might lead us to include cities for which the Crime Index is misleading.

Most important, Angell theorizes that it is probable that another reason for the only moderate correlation between the Crime Index and Welfare Effort Index is that each represents only a single aspect of moral integration or urban social organization and that these two aspects are somewhat independent of each other.<sup>49</sup> Hence, crime seems to be a

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<sup>47</sup> Ibid.

<sup>48</sup> Ibid., p. 7.

<sup>49</sup> Ibid.

Table 2. Welfare Effort and Crime Index, and Index of Urban Social Organization in Twenty Standard Metropolitan Statistical Areas.

Standard Metropolitan Statistical Area	Crime Index		Welfare Effort Index	Index of Urban Social Organization
	Crime Rate 1960, per 100,000 population	Percentile Rank <sup>a</sup>	Percentile Rank <sup>b</sup>	Percentile Rank
Baton Rouge, La.	2076.9	1.9	12.7	7.3
Des Moines, Iowa	1289.5	46.1	83.6	64.9
El Paso, Texas	1355.7	42.4	1.0	21.7
Hammond-Gary-East Chicago, Indiana	1388.9	40.5	43.1	41.8
Hartford, Conn.	755.0	76.1	66.0	71.1
Knoxville, Tenn.	1085.6	57.6	18.0	37.8
Nashville, Tenn.	1777.4	18.7	26.5	22.6
New Bedford, Mass.	927.5	66.4	50.9	58.7
New Haven, Conn.	683.8	80.1	70.2	75.2
Paterson-Clifton-Passaic, N. J.	637.9	82.7	78.8	80.8
Peoria, Illinois	943.8	65.5	56.0	60.8
Phoenix, Arizona	2093.0	1.0	30.4	15.7
Reading, Pa.	422.3	94.5	27.8	61.2
Scranton, Pa.	412.7	95.4	13.1	54.3
Spokane, Wash.	844.3	71.1	23.6	47.4
Springfield-Chicopee-Holyoke, Mass.	561.6	87.0	74.2	81.0
Tampa-St. Petersburg, Florida	1545.5	31.7	39.5	35.6
Trenton, N. J.	1151.3	53.9	100.0	77.0
Utica, N. Y.	312.3	100.0	57.4	78.7
Wichita, Kansas	931.7	66.2	92.2	79.2

<sup>a</sup>Highest percentile means least crime.

<sup>b</sup>Highest percentile means greatest welfare effort.

good negative index of the habitual social organization of a city; welfare effort is a good positive index of the intentional social organization.<sup>50</sup>

In other words, Angell sees the welfare effort of an urban area as a problem-solving process of social organization, perhaps in response to high crime rates in a city, but yet relatively independent of the crime index. He views the crime index as a "routine" or non-rational social organization process. Both are necessary to the effective functioning of the whole. We will accept Angell's position that while each alone is an inadequate index of the over-all condition (i.e., degree of urban social organization), a combination of them may be reasonably satisfactory.

It should be noted that Table 3 contains all the Pearson product moment correlations for the constituent elements of the Index of Urban Social Organization, in addition to the correlations with the Index of Urban Social Organization. One rather unexpected series of correlations is mentioned here, that of Part B of the Welfare Effort Index, the local public financing of general expenditures. The correlation between local public funds and the Welfare Effort Index is .999, and between the Index of Urban Social Organization and local public funds is .779. Although the correlation between local public funds and the Crime Index remains low (.302), the variation in the Welfare Effort

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<sup>50</sup>Ibid.

Effort Index is explained largely by local public funds, leading one to question the use of Community Chest figures as part of the Welfare Effort Index.

Table 3. Pearson Product Moment Correlations in Twenty Standard Metropolitan Statistical Areas.

	1	2	3	4	5
	Index of Social Organ- ization	Welfare Effort Index	Crime Index	Privately Financed Welfare Effort	Local Public Revenue for General Expenditure
1 Index of Social Organization		.807	.813	.446	.799
2 Welfare Effort Index			.313	.448	.999
3 Crime Index				.275	.302
4 Privately Financed Welfare Effort					.399

E. The Validity of the  
Index of Urban Social Organization

Since the correlation between Welfare Effort and Crime was not large enough to prove that the degree of social organization was a crucial and real factor influencing both events, the present study, like Angell's, sought to substantiate the importance of the concept of social organization by attempting to validate the Index of Social Organization.<sup>51</sup> This

<sup>51</sup>Ibid., pp. 9-17.

validation was carried out using techniques similar to those used by Angell in his original study, but differing in some aspects.

Turning to the data of Thorndike's study previously mentioned, Angell selected a series of items that were used by Thorndike to measure the "goodness" of cities and which Angell felt were suitable as rough measures of moral integration.<sup>52</sup> A comparison of the cities studied on these items would support or detract from the belief that he was successfully isolating moral integration, or social organization, through the Welfare Effort and Crime Indexes.

As a preliminary to this comparison the present study, like Angell's, separated the urban areas that were consistent in their scores on welfare effort and crime from those that were inconsistent.<sup>53</sup> Table 4 classifies the twenty Standard Metropolitan Statistical Areas into "consistent" and "inconsistent", according to their rank difference in welfare effort and crime, using Angell's maximum rank difference of nine places.<sup>54</sup> The breaks of 2.0 rank places were then used to separate the sixteen "consistent" cities into three broad classes: well-organized, moderately organized, and poorly organized, in order to make a test with the additional items thought to be rough measures of urban social organization.

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<sup>52</sup>Ibid., p. 8.

<sup>53</sup>Ibid.

<sup>54</sup>Ibid.

Table 4. Classification of Twenty Standard Metropolitan Statistical Areas According to Rank Order on the Welfare Effort Index and Crime Index.

Standard Metropolitan Statistical Area	Welfare Effort Index Rank <sup>a</sup>	Crime Index Rank <sup>b</sup>	Mean Rank
<u>"Consistent Cities"</u>			
<u>Well-Organized:</u>			
Paterson-Clifton-Passaic, N. J.	4	5	4.5
Springfield-Chicopee-Holyoke, Mass.	5	4	4.5
Utica, N. Y.	8	1	4.5
New Haven, Conn.	6	6	6.0
Wichita, Kansas	2	10	6.0
Hartford, Conn.	7	7	7.0
<u>Moderately Organized:</u>			
New Bedford, Mass.	10	9	9.5
Peoria, Ill.	9	11	10.0
<u>Poorly Organized:</u>			
Spokane, Wash.	16	8	12.0
Hammond-Gary-East Chicago, Indiana	11	16	13.5
Knoxville, Tenn.	17	12	14.5
Tampa-St. Petersburg, Florida	12	17	14.5
Nashville, Tenn.	15	18	16.5
Phoenix, Arizona	13	20	16.5
El Paso, Texas	20	15	17.5
Baton Rouge, La.	19	19	19.0
<u>"Inconsistent Cities"</u>			
<u>Crime Score Shows More Social Organization than Welfare Effort:</u>			
Reading, Pa.	14	3	8.5
Scranton, Pa.	18	2	10.0
<u>Welfare Effort Shows More Social Organization than Crime Score:</u>			
Trenton, N. J.	1	13	7.0
Des Moines, Iowa	3	14	8.5

<sup>a</sup>The highest per capita welfare effort ranked as "1".

<sup>b</sup>The highest crime rate is ranked as "1".

Of the seven items selected by Angell and thought to have a positive relationship to the degree of social organization in an urban area, and of the six items thought to have a negative relationship with the Index of Urban Social Organization, the present study selected to study three negative items and two positive items for which current data was available.<sup>55</sup>

Those items thought to have a negative relationship with the Index of Social Organization were homicides per 100,000 population in 1960, aggravated assault per 100,000 population in 1960, and the number of divorces and separations per 100,000 population 14 years or over in 1960. These rates were calculated for each of the sixteen "consistent" Standard Metropolitan Statistical Areas and the means for each of the three broad classes previously mentioned were computed. It was felt that these three items would give the researcher some indication of the degree of social organization. It is fairly easy to understand why homicides and aggravated assaults would indicate the degree of social organization. Divorces and separations were also included since one factor in the stability of a family may be the degree of community interest and support of such public and voluntary agencies as Family Service, Marriage and Counseling Bureaus, and Courts of Reconciliation. Table 5 gives the data for the "consistent" Standard Metropolitan Statistical

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<sup>55</sup>Appendix 1, Section H, p. 84.

Table 5. Rates and Indexes Expected to Have a Negative Relation to Urban Social Organization for Sixteen "Consistent" Standard Metropolitan Statistical Areas, Grouped According to Tentative Levels of Social Organization.

Standard Metropolitan Statistical Area	Homicides per 100,000 Population (1960)	Aggravated Assault per 100,000 Population (1960)	Divorces and Separations per 100,000 Population (1960)
<u>Well-Organized:</u>			
Paterson-Clifton-Passaic N.J.	2.1	27.4	2730.2
Springfield-Chicopee-Holyoke, Mass.	.4	6.6	3256.0
Utica, N. Y.	—	5.1	2853.5
New Haven, Conn.	1.4	16.4	3702.6
Wichita, Kansas	5.2	64.4	4160.4
Hartford, Conn.	2.3	31.2	3887.8
MEAN:	1.9	25.2	3431.8
<u>Moderately Organized:</u>			
New Bedford, Mass.	2.6	29.8	3112.6
Peoria, Illinois	1.7	38.1	3796.0
MEAN:	2.2	34.0	3454.3
<u>Poorly Organized:</u>			
Spokane, Wash.	2.1	18.0	4883.5
Hammond-Gary-East Chicago, Indiana	6.6	137.7	3992.9
Knoxville, Tenn.	6.0	43.2	3711.5
Tampa-St. Petersburg, Florida	6.1	102.8	4549.3
Nashville, Tenn.	11.5	55.8	5350.3
Phoenix, Arizona	7.5	160.1	7272.8
El Paso, Texas	3.5	71.3	4572.5
Baton Rouge, La.	5.2	133.0	5094.7
MEAN:	5.8	92.2	4749.8

Areas with respect to the three negative series as well as the means of the well-organized, moderately organized, and poorly organized groups for purposes of comparison. The results in Table 5 bear out in considerable measure our expectations. All three items — homicides, assault, and divorces and separations — vary inversely with the degree of social organization, with the most significant differences between the well and moderately organized Standard Metropolitan Statistical Areas and the poorly organized urban areas. Both homicide and aggravated assaults make up a small part of the original Crime Index, while divorce and separation rates are independent items. While Angell also included suicides, illegitimate births and deaths from venereal disease, it was believed that the data on these three items were grossly unreliable and incomparable.<sup>56</sup>

Those items thought to have a positive relationship to the Index of Social Organization were the per capita amount spent on public education in 1960 for each "consistent" Standard Metropolitan Statistical Area, and the per capita amount spent on public welfare in 1960.<sup>57</sup> Per capita education rates were computed by using the public school enrollment

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<sup>56</sup>Appendix 1, Section G, p. 83.

<sup>57</sup>1960 Compendium of City Finances, Bureau of the Census, U. S. Department of Commerce (Washington: Government Printing Office).

Table 6. Rates and Indexes Expected to Have a Positive Relation to Urban Social Organization for Sixteen "Consistent" Standard Metropolitan Statistical Areas, Grouped According to Tentative Levels of Social Organization.

Standard Metropolitan Statistical Area	Per capita Amount Spent on "Education" (1960) (Dollars)	Per capita Amount Spent on "Public Welfare" (1960) (Dollars)
<u>Well-Organized:</u>		
Paterson-Clifton- Passaic, N. J.	445.4	7.4
Springfield-Chicopee- Holyoke, Mass.	406.4	22.1
Utica, N. Y.	543.8	18.5
New Haven, Conn.	407.6	5.4
Wichita, Kansas	398.5	3.9
Hartford, Conn.	498.5	2.7
MEAN:	455.1	10.0
<u>Moderately Organized:</u>		
New Bedford, Mass.	364.2	28.4
Peoria, Illinois	335.2	3.6
MEAN:	349.7	16.0
<u>Poorly Organized:</u>		
Spokane, Wash.	443.6	.4
Hammond-Gary-East Chicago, Indiana	358.4	7.5
Knoxville, Tenn.	138.6	1.5
Tampa-St. Petersburg, Florida	323.2	1.5
Nashville, Tenn.	266.8	1.5
Phoenix, Arizona	463.5	.04
El Paso, Texas	251.2	.85
Baton Rouge, La.	364.2	.01
MEAN:	314.5	1.8

of each Standard Metropolitan Statistical Area as the population. Per capita for public welfare rates used the total 1960 population of each Standard Metropolitan Statistical Area. Table 6 gives the data for the "consistent" Standard Metropolitan Statistical Areas with respect to the two positive series. The results, again, were generally as expected. As the degree of social organization, as measured by the Index of Urban Social Organization declined, both per capita local amounts spent on education and public welfare tended to decline also.

The fact that the five indexes show generally the expected trends seems to be solid evidence that urban areas are different in respect to social organization and that the Welfare Effort Index and the Crime Index together constitute a useful measure of an urban area's social organization.<sup>58</sup>

In reference to the "inconsistent" cities, the two Standard Metropolitan Statistical Areas of Scranton and Reading, Pennsylvania, show considerably higher crime scores than welfare effort scores.<sup>59</sup> It is theorized that, in the case of these two areas, the additional social factors of unemployment and economic depression in this part of the United States in the early 1960's might be important in influencing the low scores on the Welfare Effort Index. On

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<sup>58</sup> Angell's results were comparable to those of the present study and may be found in Angell, op. cit., pp. 8, 10, and 11.

<sup>59</sup> Table 4, p. 36.

the other hand, the urban areas of Des Moines and Trenton have significantly higher welfare effort scores than crime scores. Angell refers to this phenomenon as "quickenings", or the reaction to the initiation of intentional and rational social processes (i.e., increased welfare efforts) to help solve the problem of previously high crime rates.<sup>60</sup>

In summary, it is believed that the social organization scores give a generally accurate picture of the relative standing of the Standard Metropolitan Statistical Areas studied. The difference in what we term "social organization" seems fairly well established. In the next chapter we will turn to the question of isolating the crucial factors that may help in determining the degree of social organization that an urban area possesses.

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<sup>60</sup> Angell, op. cit., p. 11.

### CHAPTER III

#### THE SIGNIFICANCE AND MEASUREMENT OF POPULATION VARIABLES

We have demonstrated that urban areas differ with respect to social organization as measured by our index. It is now the task of the researcher to locate some of the important factors that help determine the relative standing of the twenty Standard Metropolitan Statistical Areas on this Index of Urban Social Organization.

At first this task seems overwhelming, for large urban areas differ in size, in history, in racial and ethnic background of their populations, in mobility of their residents, in proportion of the labor force in different occupations, and in educational and income levels, to name but a few factors. There is also the problem, as Angell points out, of whether a particular variable, even if shown to be related to social organization, is the cause or effect of that relationship, or if the two factors are mutually reinforcing.<sup>1</sup>

Existing social theory and empirical research, however, enable the investigator to select those variables which are most likely to be significantly related to urban social organization and to assess the probability that a

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<sup>1</sup>Robert C. Angell, "The Moral Integration of American Cities," American Journal of Sociology, Vol. 57, #1, Part 2 (July, 1951), p. 15.

selected factor is either the dependent or the independent variable.

In the following pages we will not only review the variables that Angell attempted to relate to social organization, but will discuss the measurement of these population variables used in the present study. Other researchers have been dealing with the improved reliability and validity of such empirical indexes as socio-economic status, ethnicity, and urbanization, and these will be briefly reviewed and selected methodological findings incorporated into the present research. It should be noted here that the student in the area of population variables must constantly be aware of the varying labels given to population variables that are in essence measuring like social characteristics. For example, we see the proportion of ethnic and racial groups in an area being referred to by indexes labeled variously as a "heterogeneity index," a "segregation index," a "cultural complexity index," ad infinitum.<sup>2</sup>

The population variables or indexes that will be discussed in the following pages were measures calculated

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<sup>2</sup>For example, Angell, *ibid.*, p. 16, labels the proportion of ethnic and racial groups the "Heterogeneity Index"; Christen Jonassen, in "Functional Unities in Community Systems," American Sociological Review, Vol. 26, #3 (June, 1961), p. 405, labels the same characteristic "cultural complexity"; and Wendell Bell, in "The Social Areas of the San Francisco Bay Region," American Journal of Sociology, Vol. 18, #1 (February, 1953), p. 41, labels ethnic and racial proportions the "segregation index".

from 1960 United States Census data.<sup>3</sup> Theoretical justification for their use, operational definitions of each, and methods of computation will be as clearly and simply reviewed as possible in the hope of avoiding the ambiguities that arise from the diverse use of many population variables that are found in much urban and demographic research.

#### A. Community Size and Social Organization

One important factor influencing urban social organization might be size of population as it is widely believed that crime rates tend to multiply with increases in the size of the population of the community or urban area, the theory being that it is more difficult to maintain a satisfactory social order over a large number of people than over a small number.<sup>4</sup> However, like Angell, the present research found that once a population of 100,000 is passed, size is not necessarily negatively related to urban social organization, using the 1960 crime rates as the negative index.<sup>5</sup> From Table 7 we can see that there is a steady loss of social organization with increasing city size up to 100,000

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<sup>3</sup>1960 Final Report, U. S. Census of Population and Housing, Bureau of the Census, U. S. Department of Commerce, (Washington, D.C.: Government Printing Office), PHC(1) Series Nos. 14, 39, 43, 54, 61, 71, 99, 100, 102, 114, 115, 117, 125, 141, 147, 150, 156, 160, 164, and 170.

<sup>4</sup>Angell, op. cit., p. 17.

<sup>5</sup>1960 Uniform Crime Reports, Federal Bureau of Investigation, U. S. Department of Justice (Washington, D.C.: Government Printing Office, July 24, 1961).

Table 7. City Crime Rates, 1960,<sup>a</sup> By Population Groups  
(Offenses Known to the Police and Rates per  
100,000 Population).

<u>SIZE OF CITIES</u>	<u>TOTAL CRIME RATE (per 100,000)</u>
over 1,000,000	3223.6
750,000 to 1,000,000	3076.3
500,000 to 750,000	2732.4
250,000 to 500,000	3037.4
100,000 to 250,000	2840.4
50,000 to 100,000	2351.3
25,000 to 50,000	2126.0
10,000 to 25,000	1694.9
under 10,000	1234.5

<sup>a</sup> Source: 1960 Uniform Crime Reports, Federal Bureau of Investigation, U. S. Department of Justice (Washington, D. C.: Government Printing Office, July 24, 1961).

population, but above that figure crime rates tend to be irregular.<sup>6</sup> Angell offers the following explanations for this leveling off and irregularity of crime rates:

1. That all the social complexity and so-called "evils" of the largest cities are already present in the 100,000 to 500,000 population group.<sup>7</sup>

2. That cities above 500,000 are on the average older than those in the next lowest population group and

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<sup>6</sup> Angell, op. cit., p. 15.

<sup>7</sup> Ibid.

that greater maturity is a positive influence which helps affect the negative influence of larger size.<sup>8</sup>

We might also add that cities above 500,000 are not growing as rapidly on the average as those cities under 500,000, and rapid growth rate might be an important factor in influencing the crime rate. As a consequence of these figures, it was decided to ignore the population size of the Standard Metropolitan Statistical Area as a significant variable in an urban area's relative standing on the Index of Urban Social Organization, although as previously stated, all twenty Standard Metropolitan Statistical Areas selected for study had a population of between 100,000 and 500,000 in 1950.<sup>9</sup>

#### B. Selection of Population Variables

Angell attempted to correlate the following urban population variables with his index of moral integration: 1) level of income, 2) heterogeneity, 3) mobility, 4) rate of growth of the city, 5) proportions of the population adhering to various religious denominations, 6) proportion of married women working, 7) pattern of social classes in the community, and 8) rental spread.<sup>10</sup>

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<sup>8</sup> Ibid.

<sup>9</sup> Page 46 of this study.

<sup>10</sup> Angell, op. cit., pp.15-21.

Our present study is interested in examining the following population variables as possible significant factors in the relative standing of urban areas on the Index of Urban Social Organization: 1) mobility, 2) growth of Standard Metropolitan Statistical Area, 3) poverty, 4) racial and ethnic heterogeneity, 5) educational spread, 6) income spread, 7) proportion of married women in the labor force, and 8) proportion of "middle class" population. The rationale for their selection as important variables, their theoretical significance and definitions, as well as the computation of indexes will be discussed. Similarities and differences with Angell's indexes will also be described.

### C. Mobility Index

Angell states that the increased movement of persons makes social organization more difficult to maintain than if the population is relatively stable.<sup>11</sup> We would therefore agree with Angell that the increased shift of residents into or out of a community might be expected to lessen that urban area's score on the Index of Urban Social Organization.<sup>12</sup> We proceeded to test this hypothesis by the use of Standard Metropolitan Statistical Area data for in-migration between 1955 and 1960. For all twenty of the Standard Metropolitan

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<sup>11</sup> Ibid., p. 18.

<sup>12</sup> Ibid.

Statistical Areas studied, the percentages of the total Standard Metropolitan Statistical Area's population five years of age and older in 1960 who lived outside the present Standard Metropolitan Statistical Areas in 1955 were tabulated.<sup>13</sup> It was believed that the use of the 1960 Census category, "Those five years and older who lived outside the present Standard Metropolitan Statistical Area in 1955," was more reliable in measuring in-migration than the category "Those who lived in a different county in 1955," since the Standard Metropolitan Statistical Area frequently cuts across county boundaries.<sup>14</sup> It was also felt that in-migration figures were sufficient to measure mobility, although Angell's mobility index included the total percentages of both in- and out-migrants for each city, regardless of movement to or from another city, county, or Standard Metropolitan Statistical Area.<sup>15</sup>

#### D. Growth Index

Although it was realized that the rate of growth of an urban area would probably be closely associated with the Mobility Index already computed (since the in-migrants between

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<sup>13</sup> Appendix 1, Section I, p. 85.

<sup>14</sup> 1960 Final Report, U. S. Census of Population and Housing, p. 7.

<sup>15</sup> Angell, op. cit., p. 17.

1955 and 1960 would be important to both), it was felt by both Angell and the present investigator that it would be worthwhile to determine whether the growth rate over a longer period might not be independently significant.<sup>16</sup> The hypothesis was that social organization is easier the more slowly newcomers are added to the group. Therefore, the higher the rate of growth of a Standard Metropolitan Statistical Area in a ten-year period (1950 to 1960), the less the degree of social organization to be expected. The percentage growth in population numbers between 1950 and 1960 for each Standard Metropolitan Statistical Area was computed and the figures formed the Growth Index.<sup>17</sup> This index directly paralleled Angell's Growth Index,<sup>18</sup> except for the time span.

#### D. Poverty and Income Indexes

Thorndike, in his work, Your City, had found income to be significant for the "goodness" of a community or the satisfaction of the individual's material and health needs.<sup>19</sup> It can also be reasoned that as the number of persons living in what can be considered economic poverty increases in any

<sup>16</sup> Ibid., p. 18.

<sup>17</sup> Appendix 1, Section J, p. 86.

<sup>18</sup> Appendix 1, Section I, p. 85.

<sup>19</sup> E. L. Thorndike, Your City (New York: Harcourt, Brace and Co., Inc., 1939), pp. 55-69.

urban area, the amount of money spent in retail stores rather than for health or educational needs also increases. Hence, the city would have lower scores on the Index of Urban Social Organization. Jonassen's factor analysis of 82 community variables seems to justify this latter relationship between poverty and the degree of social organization in any community.<sup>20</sup> Associated with poverty, in Jonassen's research, are high loadings on child neglect and mental illness ( $r = .42$ ) and the absence of welfare loadings (i.e., health and educational sacrifice and public welfare effort), substantiating the probability of a relationship between poverty and social organization.<sup>21</sup>

Angell attempted to measure the per capita retail sales of each community as a measure of its income, found the correlation with Moral Integration was zero, and eliminated income as a significant variable.<sup>22</sup> However, it was believed, because of Jonassen's research, that this study was justified in including some measure of the economic level of each Standard Metropolitan Statistical Area as a possible significantly related variable with the Index of Urban Social Organization. A decision was made to include two economic variables. The first, a Poverty Index, was computed as follows: the percentage of all family incomes under \$3,000

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<sup>20</sup>Jonassen, op. cit., p. 404.

<sup>21</sup>Ibid., p. 405.

<sup>22</sup>Angell, op. cit., p. 16.

for each Standard Metropolitan Statistical Area.<sup>23</sup> This economic level was defined as "poverty" for the United States on the basis of United States government figures as reported in Harrington's recent book, The Other America.<sup>24</sup> Definitions of "economic poverty" and all the social implications of this state must of necessity be specific for the society being studied. Our definition of economic poverty, is by its very nature, specific to most parts of the United States.

It was also decided to include an Index of Income Spread for each urban area, the hypothesis being that as the income spread of a community increases or widens, the way of life of a community becomes more heterogeneous, both materially and socially, and this factor in turn affects the ease with which social organization occurs. Our Index of Income Spread, then, was computed by measuring the interquartile range of income in each of the twenty Standard Metropolitan Statistical Areas studied.<sup>25</sup>

#### F. Educational Spread Index

An Educational Spread Index was computed for each Standard Metropolitan Statistical Area in the same manner

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<sup>23</sup> Appendix 1, Section J, p. 85.

<sup>24</sup> Michael Harrington, The Other America (New York: The MacMillan Co., 1963), pp. 175-185.

<sup>25</sup> Appendix 1, Section J, p. 86.

and for much the same theoretical reasons that the Income Spread Index was compiled.<sup>26</sup> The hypothesis was similar in that it was believed that as the educational spread of a community increases or the educational extremes widen, the values of the community become more heterogeneous, and high degrees of social organization or cohesion become more difficult to achieve.<sup>27</sup>

#### G. Racial and Ethnic Heterogeneity Index

Both the layman and the sociologist would expect that the more the population of an American city is a mixture of races and nationalities, the more divergent the common ends and values as well as cultural heritages, and the greater the difficulties in effecting high degrees of social organization.<sup>28</sup> The evidence is strong that racial and ethnic heterogeneity is a negative factor significantly related to the level of social organization or social cohesion in any urban area or human group.<sup>29</sup>

The next problem becomes one of reliably measuring the ethnic and racial heterogeneity of an urban area. It

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<sup>26</sup> The interquartile range of education ( $Q_3 - Q_1$ ) was used. See Appendix 1, Section J, p. 86.

<sup>27</sup> Angell, op. cit., p. 20.

<sup>28</sup> Ibid., p. 16.

<sup>29</sup> Ibid., p. 20.

is in this area that we encounter particularly divergent methods of empirical measurement.

Angell constructed an index of racial and ethnic heterogeneity as follows:<sup>30</sup>

$$\text{Heterogeneity} = \frac{\text{Foreign-born whites} + 2(\text{non-whites})}{.01(\text{total population of city})}$$

He assumed that it is twice as difficult to integrate a member of another race into a community chiefly made up of native-born whites. However, he is careful to note that this does not prove that different racial and ethnic groups in a population always affect social integration unfavorably since degrees of racial and ethnic tolerance vary from country to country. It is also necessary to note that any index of heterogeneity based on proportions of ethnic and racial groups in a population are specific to the society or culture one is studying, and therefore is far from universal.

Shevky and his associates have also attempted to devise an index of racial and ethnic heterogeneity for individual census tracts, calling their measure "ethnic status."<sup>32</sup> This index is computed by finding the number of Orientals, Negroes, and Mexicans plus the number of foreign born whites from Italy and Russia per 1,000 persons for

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<sup>30</sup> Appendix 1, Section I, p. 85.

<sup>31</sup> Ibid.

<sup>32</sup> Bell, op. cit., pp. 39-47.

census tracts in the Los Angeles area. One first selects, using a rather complicated "group segregation ratio" or "index of isolation", those specific ethnic and racial groups found to be highly isolated in a specific urban area.<sup>33</sup> However, this procedure is most complicated if one is dealing with a number of large population groups, such as the present study.

Our present Ethnic and Racial Heterogeneity Index was computed in the following manner for each of the twenty Standard Metropolitan Statistical Areas:<sup>34</sup>

Racial and Ethnic Heterogeneity Index = percentage non-white + percentage foreign born or native of foreign or mixed parentage of the population from Mexico, Poland, Czechoslovakia, Austria, Hungary, the U.S.S.R., Italy and Puerto Rico.<sup>35</sup>

Unlike Angell, non-white was weighted equally with the other components of our Index. Instead of including all foreign-born and native of mixed or foreign parentage groups, a decision was made to include only those groups referred to as the "New Immigrants", and those groups from Mexico and Puerto Rico. Orientals were not included since no census category exists for these individuals.

Our hypothesis was that as the total percentage of these racial and ethnic groups increases in any urban area,

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<sup>33</sup>Ibid., p. 42.

<sup>34</sup>Appendix I, Section J, p. 85.

<sup>35</sup>Ibid.

the relative standing of the area on the Index of Urban Social Organization will decrease, since cultural values and common social orientations will become more diverse and social cohesion among all groups will be more difficult to effect.<sup>36</sup>

#### H. Proportion of Married Women in the Labor Force

This factor was included as a possible significant variable because of Angell's hypothesis that the working of married women may be detrimental not only to their families but to the social organization of an urban area as well.<sup>37</sup> It was proposed that these women would be less interested and concerned with the welfare of others in the community and would take a less important part in working for civic organizations that would promote social cohesion (i.e., volunteer groups, etc.). Therefore, it was expected that the higher the percentage of married women in the labor force the lower the standing of an urban area on the Index of Urban Social Organization.

An index was computed by finding the proportions of married women living with their husbands who were in the labor force in 1960 for each of the twenty Standard Metropolitan Statistical Areas studied.<sup>38</sup>

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<sup>36</sup> Angell, op. cit., p. 16.

<sup>37</sup> Ibid., p. 19.

<sup>38</sup> Appendix 1, Section J, p. 86.

## I. Proportions of "Middle Class" Population

The final variable selected for inclusion in the present study is the proportion of the "middle class" population of an urban area.

A hypothesis that merits testing is that cities that have a proportionately larger middle class to mediate between the extremes in social status will have higher scores than those that have fewer in the middle class.<sup>39</sup> Jonassen has also found that high loadings on "community welfare" in his study were also accompanied by high loadings on the "middle class" factor, or the "craftsman variable" ( $r = .72$ ).<sup>40</sup> He theorizes that the community possessing superior social organization and therefore, high welfare efforts, is attempting to achieve the accepted positive values of its predominantly middle-class population.<sup>41</sup>

This "middle class" variable was measured by computing the percentages of the male population that were employed in the first three United States Census occupation categories: "Professional, technical and kindred workers," "managers, officials and proprietors (including farm)", and "clerical and kindred workers."<sup>42</sup> The researcher is aware that these

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<sup>39</sup>Appendix 1, Section J, p. 86 .

<sup>40</sup>Jonassen, op. cit., p. 404.

<sup>41</sup>Ibid., p. 405.

<sup>42</sup>Appendix 1, Section J, p. 86.

categories are far from homogeneous and may not include all occupations that would be in the "middle" social category. Angell's index differed from the present Middle Class Index in that it included only craftsmen and skilled workers.<sup>43</sup> However, it was felt that the three occupational categories used in this study would give a more complete sampling of those occupations that could be considered part of the "middle class".

#### J. Other Indexes

Church membership was not included as a variable because of the unavailability of comparable statistics. Angell himself also finally excluded this variable because of unreliable statistics, although acknowledging that church participation might be correlated with civic responsibility and the "intentional welfare effort" of an urban area.<sup>44</sup> It was also believed that Angell's use of rental spread paralleled the present study's use of a Poverty Index and Income Spread Index as a measurement of the extremes of wealth and poverty in a population.<sup>45</sup>

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<sup>43</sup> Angell, loc. cit.

<sup>44</sup> Ibid., pp. 18-19.

<sup>45</sup> Appendix 1, Section J, p. 86.

## CHAPTER IV

### EMPIRICAL RESULTS AND SIGNIFICANT POPULATION VARIABLES

The completed indexes of the population variables previously discussed can be found in Table 8.<sup>1</sup> Both Pearsonian correlation coefficients ("r's") and the Multiple R's were computed for the population variables studied, using the IBM 7072. The results of the partial correlation coefficients (r) may be found in Table 9,<sup>2</sup> and the multiple coefficients (R) may be found in Table 10.<sup>3</sup>

The results of the correlations tended, on the whole, to confirm Angell's original research in spite of the fact that differing methods of index computation were involved. In some cases, nearly identical correlations were obtained. In the following pages the empirical results of the present study will be discussed and compared with the findings of Angell's original study.

#### A. Pearson Product Moment Correlations

The hypothesis that the more the population of an American urban area is a mixture of ethnic and racial groups

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<sup>1</sup>Page 67.

<sup>2</sup>Page 68

<sup>3</sup>Page 69.

the greater the difficulties of social organization was confirmed. The correlation coefficient between the Index of Urban Social Organization and the Index of Racial and Ethnic Heterogeneity is  $-.514$  and is the most significant of the population variables ( $r \geq .360$  at the  $.05$  level). This signifies that 26% of the variation in social organization can be attributed to differences among the urban areas in their racial and ethnic heterogeneity. This correlation is close to the one obtained by Angell of  $-.59$ , or 35% explained variation by this variable.<sup>4</sup> This difference between the present study's correlation of  $-.514$  and Angell's "r" of  $-.590$  is not significant at the  $.05$  level. Thus, even though Angell's correlation of heterogeneity and the Index of Urban Social Organization is higher, such a difference could have occurred by chance.

The hypothesis that social solidarity can be more easily maintained in a stable group than in one with a high turnover of members and therefore, an increased shift of migrants into an urban area would lessen the degree of social organization, is also confirmed.

The correlation coefficient, significant also at the  $.05$  level, for mobility and social organization is  $-.38$ . This Mobility Index explains approximately 14% of the variation in urban social organization and affirms our original

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<sup>4</sup>Robert C. Angell, "The Moral Integration of American Cities," American Journal of Sociology, Vol. 57, #1, Part 2 (July, 1951), p. 17.

assumption that there is a tendency for the mobility scores to increase as the social organization scores fall. Angell's correlation ( $-.49$ ), in this regard, was again slightly higher than that of the present study's.<sup>5</sup> The difference between the two was not significant at the  $.05$  level.

When the two factors of racial and ethnic heterogeneity and mobility are correlated with each other, the coefficient "r" is found to be  $+.177$ , and is not significant at the  $.05$  level. Racial and ethnic heterogeneity and Mobility Index scores are the only significantly related variables to the Index of Urban Social Organization at the  $.05$  level. However, the correlation of poverty with social organization is  $-.344$  (12% explained variation of the Index of Urban Social Organization), showing that there may be a tendency for the scores of urban areas on social organization to fall as the proportions of the population with incomes under \$3,000 increase. There is also a negative correlation between the two series of growth and social organization ( $-.304$ ) as compared to Angell's correlation of  $-.43$ .<sup>6</sup> Other figures show that the rate of growth was positively related to mobility ( $+.936$ ), so that the influence of the short-run growth of a city on the Index of Urban Social Organization is largely explained through the variable of mobility.

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<sup>5</sup>Ibid., p. 20.

<sup>6</sup>Ibid.

The hypothesis that cities that have a larger middle class to balance the extremes in social status will have higher social organization than those that have fewer in the middle class was largely invalidated by the use of the census occupation data ( $r = +.119$ ). However, the census categories are not homogeneous or mutually exclusive and we used the present Middle Class Index with these imperfections in mind.

The correlations between income and educational range and the Index of Urban Social Organization were not significant, at  $+.199$  and  $+.082$  respectively.

A negative correlation of  $-.045$  between married women in the labor force and the Index of Urban Social Organization also proved non-significant. However, it is extremely interesting to note that Angell's correlation of these two series (married women in the labor force and his Index of Moral Integration) was considerably higher ( $r = -.54$ ).<sup>7</sup>

#### B. Other Significant Correlations

It is not surprising to find the rate of growth of an urban area positively related to mobility ( $+.936$ ) since our Mobility Index measured only the percentage of in-migrants to an urban area.

Correlations between mobility and percentage of middle class, and between income and the proportion of "middle class" must also be noted. We find a highly significant

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<sup>7</sup>Ibid.

correlation between mobility and proportion of middle class (+.414) and income and middle class (+.371). It would seem that the occupational classes included in our Middle Class Index are more geographically mobile and more prosperous.<sup>8</sup>

We also find a highly significant correlation between the educational and income spreads (+.711) and between racial and ethnic heterogeneity and educational spread (+.371). In other words, as income disparity increases, so does educational disparity, confirming the close relationship between education and income levels. In addition, the higher the proportion of racial and ethnic groups, the greater the educational disparity.

The remaining significant correlation is between the Poverty Index and married women in the labor force (-.396). As the proportions of those with incomes under \$3,000 increase in any urban area, the percentage of married women in the labor force decreases, or vice versa. Perhaps important factors influencing this relationship are the lack of employment opportunities for women to supplement their husband's incomes in urban areas where the proportions of those families with incomes under \$3,000 are higher or possibly, increases in proportions of married women not in the labor force reflect a more generalized lack of employment opportunities

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<sup>8</sup> Appendix 1, Section J, p. 86.

which in turn influences the number of families having yearly incomes of less than \$3,000.

### C. Multiple Correlations

In Table 10<sup>9</sup> are found the multiple correlations for the population variables with the Index of Urban Social Organization. The square of the multiple correlation always represents the total variation in the dependent variable explained by the independent variables.<sup>10</sup>

We find that variable #7, or racial and ethnic heterogeneity, has an R of .5139, explaining the largest amount of variation in our Index of Urban Social Organization, or 26% of the variation. When the Income Index is added, the two variables have a multiple R of .6120, or explain together about 38% of the total variation in social organization among the twenty Standard Metropolitan Statistical Areas. These two factors (income and heterogeneity) have a non-significant correlation ( $r = +.241$ ), but together help explain the greater part of the variation in social organization.

When the Mobility Index is added to the multiple correlation, an R of .6724 is obtained. These three variables — ethnic and racial heterogeneity, income, and

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<sup>9</sup>Page 68.

<sup>10</sup>Hubert Blalock, Jr., Social Statistics (New York: McGraw-Hill Book Co., Inc., 1960), p. 326.

mobility — explain approximately 45% of the total variation in social organization.

The Poverty Index raises the multiple correlation to .7309, or the total explained variation in social organization to 53%, and with the addition of the Education Index we get a multiple R of .7649, or 58% of the total variation in social organization explained.

The small amount of total variation that the Education Index explains can be understood in the light of the very high correlation between income and education (+.711). The influence of the educational variable has already been expressed, in large measure, through the Income Index.

Adding the proportion of middle class to our multiple correlation, we get an R of .7997, or 64% of the total explained variation in social organization. Again, because of the significant correlation between income and middle class (+.371), the income variable has already expressed the influence of middle class in the total explained variation in social organization.

Urban growth and married women in the labor force add little to the multiple correlations, with R's of .8553 and .8576 respectively. Much of the influence of the former has already been expressed through the influence of the mobility variable, the correlation between the two series of mobility and growth being extremely high ( $r = .936$ ).

In summary, the total variation in the Index of Urban Social Organization explained by the eight selected population

variables was approximately 74% ( $R = .8576$ ). This is an improvement over Angell's explained variation of 64% ( $R = .8000$ ).<sup>11</sup> Of the eight variables that have been tested for their relation to urban social organization in twenty randomly selected Standard Metropolitan Statistical Areas of more than 100,000 population, three have shown significant relationships to social organization with the multiple correlations: racial and ethnic heterogeneity, income, and mobility. Two, mobility and racial and ethnic heterogeneity, appear to be the key factors, both in Angell's study and the present research, in influencing the degree of social organization of a large group or an urban area.<sup>12</sup>

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<sup>11</sup> Angell, loc. cit.

<sup>12</sup> Ibid., p. 21.

Table 8. Indexes of Population Variables.<sup>a</sup>

1	2	3	4	5	6	7	8	9
Standard Metropolitan Statistical Areas	City Growth <sup>b</sup> 1950-1960 (Percentage)	Mobility Index (Percentage of Population of five years and older who lived in a different SMSA in 1955)	Poverty Index (Percentage of families with income under \$3000 in 1960)	Education Index Q3 - Q1 (Years)	Income Index Q3 - Q1 (Dollars)	Racial and Ethnic Hetero- geneity Index (Percentage)	Married Women in Labor Force (Percentage)	Middle Class Index (Percentage)
Baton Rouge, La.	54.4	19.5	21.9	4.5	5052	33.2	33.6	34.9
Des Moines, Iowa	26.8	17.1	12.9	4.2	4259	6.9	33.9	35.5
El Paso, Texas	70.1	26.3	22.1	6.5	4057	34.7	26.5	35.4
Gary-East Chicago- Hammond, Indiana	49.5	12.9	10.9	4.1	4520	27.4	24.3	20.7
Hartford, Conn.	38.2	13.7	8.7	4.4	4578	22.7	35.7	34.2
Knoxville, Tenn.	18.2	10.7	27.5	4.2	4523	7.8	28.8	25.3
Nashville, Tenn.	33.2	16.8	23.5	5.0	4700	24.9	34.8	31.7
New Bedford, Mass.	1.7	5.1	20.2	5.0	4187	8.4	41.5	22.6
New Haven, Conn.	24.6	11.6	11.6	4.6	4190	19.0	32.8	32.6
Paterson-Clifton- Passaic, New Jersey	44.5	14.0	8.4	7.4	9710	25.9	29.2	36.6
Peoria, Illinois	24.3	7.4	13.1	4.0	3945	14.1	27.6	30.1
Phoenix, Arizona	109.0	33.9	19.1	4.2	3894	26.0	30.5	30.7
Reading, Pennsylvania	16.7	7.4	13.9	3.6	3300	9.6	35.7	25.3
Scranton, Pennsylvania	.1	3.9	21.7	4.5	3651	24.6	26.6	26.5
Spokane, Washington	34.6	21.3	15.7	3.8	4416	5.1	31.3	35.9
Springfield-Chicopee- Holyoke, Massachusetts	24.7	11.1	12.2	4.4	4316	17.8	32.7	28.6
Tampa-St. Petersburg, Fla.	97.8	34.5	30.0	5.0	4216	15.2	53.2	29.9
Trenton, New Jersey	24.9	12.7	11.5	4.1	4881	37.6	35.2	32.8
Utica, New York	25.4	10.3	14.3	4.3	4243	17.5	33.1	33.0
Wichita, Kansas	63.4	19.6	13.1	4.4	4584	8.0	31.3	36.5

<sup>a</sup>Source: 1960 Final Report, U. S. Census of Population and Housing,  
PHC(1) Series, Bureau of Census, U. S. Department of Commerce

<sup>b</sup>Units of 9 added to percentage growth to produce positive numbers.

Table 9. Population Factors and Index of Urban Social Organization.<sup>a</sup>

Variable	1 with Index of Urban Social Organi- zation	2 with Growth	3 with Mobility	4 with Poverty	5 with Educa- tion	6 with Income	7 with Racial and Ethnic Hetero- geneity	8 with Married Women in the Labor Force	9 with Percent Middle Class
	r <sup>b</sup>	r	r	r	r	r	r	r	r
1 Index of Social Organi- zation		-.304 <sup>c</sup>	-.376* <sup>d</sup>	-.344	+.082	+.199	-.514*	-.045	+.119
2 Growth			+.936*	-.299	+.222	+.077	+.274	+.197	+.308
3 Mobility				-.144	+.194	+.010	+.177	+.303	+.414*
4 Poverty					-.035	-.243	+.058	-.396*	-.179
5 Education						+.711*	+.371*	+.027	+.321
6 Income							+.241	-.114	+.371*
7 Racial and Ethnic Hetero- geneity								-.231	+.146
8 Married Women in Labor Force									-.014

<sup>a</sup>N = 20

<sup>b</sup>r = Pearson product moment correlation

<sup>c</sup>All correlations computed by IBM 7072

<sup>d</sup>Starred correlations are significant at the .05 level. ( $r \geq .360$ )

Table 10. The Multiple Correlations<sup>a</sup> of Eight Population Variables with the Index of Urban Social Organization.

Population Variable Included in Multiple Correlation	Multiple R <sup>b</sup>	R <sup>2</sup> c (Percentage)
1 Racial and Ethnic Heterogeneity	.5139	26.41
2 Income	.6120	37.45
3 Mobility	.6724	45.21
4 Poverty	.7309	53.42
5 Education	.7649	58.51
6 Percentage Middle Class	.7977	63.63
7 Growth	.8553	73.15
8 Married Women in Labor Force	.8576	73.55
Total explained variation in the Index of Urban Social Organiza- tion by Eight Population Var- iables	.8576	73.55

<sup>a</sup>All correlations computed by IBM 7072.

<sup>b</sup>Multiple R and R<sup>2</sup> are cumulative

<sup>c</sup>R<sup>2</sup> = variation explained in Index of Urban Social Organization

## CHAPTER V

### SUMMARY AND CONCLUSIONS

In the present research we have been concerned with the variations that urban areas of comparable population size evidence in respect to degrees of social organization and have sought to quantitatively measure these varying degrees of urban social organization in a partial replication of Robert Cooley Angell's earlier study.<sup>1</sup>

In Chapter I it was stated that the moral integration or social organization in any group is the degree to which there is a set of common values and ends towards which a majority of the members are oriented and in terms of which the life of the group is organized. It was emphasized that the social organization of an urban area also implies the degree to which the citizens are able to act as an entity to meet the needs of all persons in the area, as evidenced by local public and private welfare efforts. The urban areas' crime rates also give the observer some evidence of the degree to which the group's members are not oriented to the common values or goals of the community.

An attempt was made to quantitatively measure urban social organization by the use of the Index of Urban Social

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<sup>1</sup>Robert C. Angell, "The Moral Integration of American Cities," American Journal of Sociology, Vol. 57, #1, Part 2 (July, 1951), pp. 1-140.

Organization, which was comprised of two elements: local private and public per capita welfare efforts for twenty randomly selected Standard Metropolitan Statistical Areas, and the total crime rates per 100,000 population in each of these Standard Metropolitan Statistical Areas. The Pearsonian correlation of  $+0.32$  between these two elements of the Index of Urban Social Organization indicates their considerable independence, as did Angell's correlation of  $+0.39$ . Their correlations with the Index of Urban Social Organization were both high, indicating their comparable usefulness as a measure of urban social organization.

However, the present study, like Angell's sought to test the validity of the Index of Urban Social Organization by correlating its results to a series of items, each of which appeared to be alternative indices of social organization. A comparison of the relative scores of the twenty Standard Metropolitan Statistical Areas on the Index of Urban Social Organization and such items as the number of divorces and separations, homicides, aggravated assaults and per capita educational and public welfare expenditures, confirmed the belief that both Angell's and the present study were successfully measuring urban social organization through the welfare effort and crime indexes.

Having demonstrated that urban areas of comparable population sizes do differ with respect to social organization, the present study, following Angell's, sought to then isolate some of the important factors that helped determine

the relative standing of the twenty urban areas studied on the Index of Urban Social Organization using eight population variables: growth, mobility, poverty, racial and ethnic heterogeneity, income and educational range, proportions of middle class, and married women in the labor force. Two factors, namely "racial and ethnic heterogeneity" and "mobility", stand out as significant variables in influencing the degree of social organization of an urban area in both Angell's and in the present study.

The empirical findings of this study, "Urban Social Organization and Related Factors", have largely confirmed the findings of Angell's original research. In spite of the use of different indexes of welfare effort, crime, racial and ethnic heterogeneity, mobility, poverty, and growth, the correlations between like factors in the two studies remain strikingly similar and in some cases identical.

At first glance, our findings might seem discouraging for any practical implementation, because the importance of objective factors like population mobility and racial and ethnic heterogeneity looms so large in influencing social organization. Angell, however, proceeded to study four specific urban areas in depth and found that both efficient leadership and effective social organization are necessary to carry out the common values and goals of the community's residents, and these, in turn, while being influenced by the mobility and racial and ethnic make-up of the community, can positively influence the degree of social organization of

an urban area in spite of that community's high score on the mobility and heterogeneity indexes.<sup>2</sup>

To understand the kind or quality of effective leadership and social organization that is necessary to help negate the disintegrative effect of population mobility and racial and ethnic heterogeneity on a community's degree of social cohesion or solidarity, it becomes necessary to review in some detail the explanation of why the two factors of mobility and heterogeneity impair social organization.

With respect to mobility, Dr. Angell notes that the main reason for the negative relationship between mobility and social organization is that the various elements of the population, or any human group, need time to become adapted to one another and to develop a sense of social solidarity or cohesion.<sup>3</sup> Mobility interferes with this process, for persons who have recently arrived in the city do not yet have much stake in the community; hence, they do not identify themselves with the city or its constituent parts sufficiently either to make the norms of their conduct correspond with those generally accepted in the community or to take any responsibility for promoting a more adequate set of such norms. In other words, norms representative of loyalties

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<sup>2</sup>Ibid., pp. 22-114. The four cities that Angell studied were identified only as Bellevue, Bordertown, Gorge City, and Mediana.

<sup>3</sup>Ibid., p. 120.

or responsibility to the wider community are generally lacking in highly mobile persons.

"To state the matter conversely, the stable relations of persons to groups and of groups to each other, that go with a low rate of mobility allow opportunity for the induction of all into a way of life governed by a set of norms that is acceptable to the community as a whole and adequate to its needs."<sup>4</sup>

In a manner similar to the way in which geographical mobility serves to isolate socially the highly mobile from community-wide values, we can explain why high degrees of racial and ethnic heterogeneity in a city impair social organization. In the United States both non-whites and the "new immigrants" have lived, either by choice or by force, in relatively segregated segments of our society. Their intimate contacts may be almost exclusively among members of their own ethnic or racial group. In many respects, this has produced societies within a society, and a social alienation that, if anything, is even greater and more lasting than that imposed by geographical mobility, for insufficient education, low income, and lack of employment may compound the community alienation of these groups.

Certainly, the influence on the degree of social organization of any urban area is a more complex problem than can be stated or discussed by the two factors of geographical mobility and racial and ethnic heterogeneity.

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<sup>4</sup>Ibid.

The historical development of the values of the society of which an urban area is a part must also play a key role in the awareness of the individual of a city towards the needs of the community and its residents. However, high geographical mobility and cultural unlikenesses remain facts of contemporary urban society as well as crucial factors in the degree of social organization that a community possesses. Certainly, we cannot reduce or deport cultural or racial minority groups or artificially lessen rates of population movement in any urban society.

It seems, at this point, that Angell's research into the influences of leadership and community social organization can be of value in contemplating any practical or ameliorative goals for those who wish to improve the social organization of urban areas.

As Angell notes:

"When these institutions definitely orient their activities toward the community as a whole, they have measurable integrative influence.....When the school and the church turn their efforts in the direction of bringing into salience the moral norms required for a satisfactory city-wide social order, they actually help produce that order."<sup>5</sup>

Angell's theory, then, would postulate that the most effective leaders would be men who can keep salient the larger loyalties and social awareness required for community-wide participation. Likewise, this orientation can only give effect to community norms if the person thoroughly understands

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<sup>5</sup>Ibid., p. 122.

the community and its problems. But this awareness and social realism come through the influence of social institutions — mainly the educational and welfare agencies of the area. So it seems, in Angell's view, that the burden for improving social organization falls on the responsible leaders of a group and the success of its educational and welfare institutions in transmitting a "community" or "world" view. The necessity of this broader or "community-wide" view has implications not only for the social organization of American urban communities, but for the social cohesion of other large groups composed of heterogeneous and mobile individuals, such as government bureaucracies, industrial combines, organizations of international scope, and rapidly industrializing and urbanizing areas in other parts of the world.

#### Suggestions for Further Research

Angell's "Moral Integration of American Cities" and the present study have a number of implications for further theoretical and empirical research.

Two areas of possible research within the field of American race relations might well be considered at this point. First, can we predict those areas that will have more serious problems with racial integration from the relative standing of all urban areas on our Index of Urban Social Organization? Second, is the added dimension of efficient

leadership a crucial factor in handling racial tensions effectively in those urban areas with high mobility and racial and ethnic heterogeneity rates?

Perhaps more important than the preceding problems is the need for cross-cultural research to validate the importance of social organization as well as united community effort and effective leadership in making a city a better place to live. Do the specific cultural orientations of various societies impede or discourage the development of a "community-wide" view and civic responsibility? Is this degree of social organization important to the successful development of urban areas in other parts of the world? Will we find urban areas differing in their relative standings on the Index of Urban Social Organization in much the same manner as American communities?

Further study is also needed to perfect the degree of reliability of the Welfare Effort and Crime Indexes in measuring urban social organization, and other comparable and universal indexes need to be developed to measure the degree of social cohesion in similar types of large, heterogeneous groups. The population variables studied were, for the most part, still imperfect measures of such concepts as "middle class" and "social heterogeneity", and the need for more reliable and universal indexes in this area is also apparent. Certainly, the unavailability of direct measures of local public expenditures for social welfare in

American urban communities points to the need for more inclusive statistics in this area.

In summary, it would seem that in order to deal effectively with racial prejudice, or any other problem of city life, it is necessary to have ameliorative influences such as cooperative leadership and community-conscious organizations. These, then, are also promising points of departure for further, more narrowly focused research studies and perhaps this type of research will lead not only to a more thorough understanding of the collective life, but an improvement of this life for all urban citizens.

## APPENDIX I

THE COMPUTATION OF INDEXESA. The Welfare Effort Index (Angell's Study)<sup>1</sup>

Angell's Index of Welfare Effort was computed from 1940 data supplied by Community Chests and Councils, Inc. The cards of Community Chests and Councils, Inc., show the population covered by the campaign in each city, the quota assigned, the amount raised, and the number of persons making pledges. From this data, the following formula was constructed to give a Welfare Effort Score:

$$\frac{\text{Amount raised}}{\text{Quota}} + \frac{\text{Pledges}}{\text{Number of families in the area}} + \frac{\text{Amount raised}}{\text{.0033 (yearly retail sales)}}$$

Each of the three ratios fluctuated around unity so that the scores fluctuated around 3.0. Angell felt that each of the three ratios measured one aspect of welfare effort: degree of achievement of goals, proportion of families giving, and economic sacrifice involved.

B. Welfare Effort Index (Present Study)

Part A, local private financing of welfare, of the Welfare Effort Index was computed from 1960 data supplied

<sup>1</sup>Robert C. Angell, "The Moral Integration of American Cities," American Journal of Sociology, Vol. 57, #1, Part 2 (July, 1951), pp. 124-125.

by the United Community Funds and Councils of America, Inc., New York. This data shows the goal for each Standard Metropolitan Statistical Area, the amount raised, and the population covered. A per capita amount for each Standard Metropolitan Statistical Area was computed from the following formula:

$$\frac{\text{amount raised}}{\text{population covered}}$$

Part B of the Welfare Effort Index, or local public revenue for general expenditures, was computed from data supplied by the United States Department of the Census in its publication, Local Government Finances in Standard Metropolitan Areas, No. 6, Vol. III, 1958. From this data the following formula was constructed to give a Local Public Per Capita Welfare Effort score for each of the twenty Standard Metropolitan Statistical Areas:

$$\frac{\text{total general revenue - amount contributed by state government - amount of federal revenue contributed}}{\text{total population of Standard Metropolitan Statistical Area}}$$

The scores on this index measured the amount of local revenue contributed to general expenditures for the Standard Metropolitan Statistical Area. "General expenditures" included the items: education, police, public welfare, hospitals, parks and recreation, and health, and excluded any state or federal grants-in-aid for such things as school lunches, surplus foods, and hospitals. It was believed, therefore, that Part B of the Welfare Effort Index was a reliable index of the local per capita revenue for local welfare efforts.

The formula for the total Welfare Effort scores were computed as follows:

$$\frac{\text{Part A (local per capita private effort) + Part B (local public financing of general expenditures)}}{2}$$

These scores were converted to percentages, ranging from 1% to 100%, high percentages meaning increased welfare efforts.

### C. Crime Index (Angell's Study)<sup>2</sup>

A A three-year average of crimes was taken from data drawn from the 1938, 1939, and 1940 Uniform Crime Reports published by the Federal Bureau of Investigation. The three-year totals for murder and non-negligent manslaughter, robbery and burglary were computed as follows:

First, standard yearly frequencies per population over fifteen years of age were established for cities between 100,000 and 1,000,000 for the three categories of crime selected.

Second, the standard burglary frequencies were then divided by each of the other two and the square roots of the two quotients taken. These square roots were used as factors by which to multiply the number of homicides and robberies for each city before combining them with the burglaries by addition. The effect of this operation was to give crimes in the three categories weights proportional to the square roots

<sup>2</sup> Ibid., p. 123.

of their frequencies, i.e., one homicide equalled 7.75 burglaries. Finally the sums of the three categories, as thus manipulated, were divided by the 1940 population over fifteen years of age for each city to give the Crime Index scores.

#### D. Crime Index (Present Study)

The total criminal offenses reported to the police per 100,000 population for each Standard Metropolitan Statistical Area were taken from the 1960 Uniform Crime Reports, published by the Federal Bureau of Investigation, to yield a Crime Index. Weighting of specific crimes was not felt to be justified. The total crime rates per 100,000 population were converted to percentages ranging from 1% to 100% and the percentages were reversed so that a low percentage meant a high crime rate and a higher percentage indicated a lower crime rate. This was done to make the results comparable with those of the Welfare Effort Index.

#### E. Integration Index (Angell's Study)<sup>3</sup>

The Integration Index was computed by using the Crime Index and the Welfare Effort Index. The crime scores were multiplied by 2 in order to give them double weight in the final integration scores; the two scores for each city

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<sup>3</sup>Ibid., p. 125.

were added and the sums divided by 3 to bring the integration scores back to a series having the same mean and standard deviation as the constituent series.

F. Urban Social Organization Index (Present Study)

The Index of Urban Social Organization was computed for each urban area by the following formula:

$$\frac{\text{Combined Welfare Effort Index score} + \text{Crime Index score}}{2}$$

No additional weighting was done to the Crime Index scores and the subsequent close correlations between Angell's and the present study's research seemed to justify this equal weighting of both crime and welfare effort scores.

G. Rates and Indexes Used in Validation of the Index of Moral Integration (Angell's Study)<sup>4</sup>

Angell used fourteen items derived from data supplied by Dr. Thorndike's Your City and applicable to the year 1940: the percentage that second-hand store sales are of all retail sales, the percentage that chain-store sales are of retail sales, the births per 1,000 females aged 20-44 in 1938, the median size of the family, the percentage of homes owned by the occupants, homicides per 10,000 population, suicides per 10,000 population, illegitimate births per 10,000 population and syphillis and gonococcus infections divided by the sum of the population fifteen years of age and over.

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<sup>4</sup>Ibid., pp. 125-126.

Indexes of public efforts to support schools, recreation, libraries and museums were divided by the per capita retail sales and public funds expended on sanitation, health, and public safety were computed in the same manner.

H. Rates and Indexes Used in Validation of the Index of Urban Social Organization (Present Study)

The five items used in Tables 5 and 6 of Chapter III were derived from the 1960 United States Census Data and the 1960 Uniform Crime Reports published by the Federal Bureau of Investigation. In Table 5, the items were computed in the following manner:

1. The total reported homicides and aggravated assault rates per 100,000 population for each urban area were taken directly from the 1960 Uniform Crime Reports.

2. The number of divorces and separations were summed for each Standard Metropolitan Statistical Area and the proportion computed for every 100,000 of the population fourteen years and older, to arrive at a divorce and separation rate. This index was computed from the 1960 Final Report, United States Census of Population and Housing, PHC(1) Series.

In Table 6, per capita amounts spent on education and public welfare were computed using the following formulae:

- a. 
$$\frac{\text{amount spent on public welfare}}{\text{total population (1960)}}$$
- b. 
$$\frac{\text{amount spent on public education}}{\text{total public school enrollment (1959)}}$$

Public welfare and education amounts were obtained from data found in the Compendium of City Government Finances in 1960, published by the United States Bureau of the Census.

### I. Indexes Used in Measuring Population Variables (Angell)<sup>5</sup>

All of Angell's indexes of population variables were derived from 1940 United States Census Data.

- a. Heterogeneity Index =  $\frac{\text{Foreign born whites} + 2 \text{ (non-whites)}}{.01 \text{ (total population of city)}}$
- b. Mobility Index = percentage of persons who lived elsewhere in 1935 + percentage of persons living elsewhere in 1940 who lived in each city in 1935.
- c. Income Level Index = per capita retail sales of each city
- d. Growth Index = percentage growth between 1920 and 1940 for each city
- e. Married Women in the Labor Force Index = proportion of married women gainfully employed in 1939.
- f. "Middle-class" Index = percentage of clerical and skilled manual workers of the total employed male labor force.
- g. Rental Dispersion Index = coefficient of variation computed using 1940 rental figures for each city.

### J. Indexes Used in Measuring Population Variables (Present)

All of the data used in computing the population indexes were derived from 1960 United States Census Data

<sup>5</sup>Ibid., pp. 15-21.

on Standard Metropolitan Statistical Areas. The methods for computing the eight population indexes follow:

- a. Mobility Index = 
$$\frac{\text{number of persons who lived outside the present Standard Metropolitan Statistical Area in 1955}}{1960 \text{ population } 5 \text{ years and older}}$$
- b. Heterogeneity Index = 
$$\frac{\text{number of non-white + number of foreign-born and first generation (from foreign or mixed parentage in Mexico, Puerto Rico, Poland, Czechoslovakia, Austria, Hungary, the U.S.S.R. and Italy)}}{\text{total 1960 population}}$$
- c. Growth Index = percentage growth in population numbers, 1950-1960, for each Standard Metropolitan Statistical Area
- d. Poverty Index = 
$$\frac{\text{number of families with yearly incomes under } \$3,000}{\text{total number of families}}$$
- e. Middle-Class Index = 
$$\frac{\text{number of males classified as "proprietors, managers, technical, and kindred workers, officials, proprietors (including farm), clerical and kindred workers"}}{\text{total number of males employed}}$$
- f. Married Women in the Labor Force Index = 
$$\frac{\text{number of married women in the labor force (living with husband)}}{\text{total number of women 14 years of age and over in the labor force}}$$
- g. Income Index = interquartile range, or  $Q_3 - Q_1$  (based on U. S. 1960 Census Data of family incomes in 1959)
- h. Education Index = interquartile range, or  $Q_3 - Q_1$  (based on 1960 United States Census Data concerning numbers of those 25 years and over in the total population and the number of school years completed)

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