Estimating the Size of Jewish Communities Using Random Telephone Surveys*

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Cost-shared, random telephone population studies could be extremely valuable in meeting the . . . need (for demographic information). For the most part, Jewish communities are forced to plan and operate human service delivery systems with the most primitive kinds of information about the nature and extent of the publics whom they are dedicated to serve.

Introduction

Greater Cincinnati's Jewish population has been estimated to be 30,000.[1] This figure was derived by modifying the results of the National Jewsish Population Study of 1971 which estimated the Jewish population of Greater Cincinnati to be between 32,500 and 38,000.[2] The lower estimate appears to be considerably in excess of the actual number of people who live in the Greater Cincinnati area and who identify themselves as Jewish.

The generally accepted population estimate is suspect for several reasons. First, it is based primarily on data that are ten years old. Second, the standard used to define a Jewish family appears to have led to an overestimate of the population size.[3] Third,

[1] *American Jewish Yearbook - 1979,* Jewish Publication Society, Philadelphia, 1978, p. 186.

[2] *The National Jewish Population Study* was conducted under the direction of Dr. Fred Massarik of the University of California of Los Angeles, and was sponsored by the Council of Jewish Federations and Welfare Funds, New York.

While it is not well documented, Professor Massarik apparently reported to Cincinnati Jewish Agency executives and to members of the Social Planning Division of the Jewish Federation of Cincinnati at meetings on April 27, 1972 that the Greater Cincinnati area had approximatley 13,000 Jewish households according to the National Jewish Population Study. (From the notes of Walter A. Rubinstein, then Assistant Executive Director of the Jewish Federation of Cincinnati.) The NJPS data for Cincinnati indicate about 2.5 Jewish persons per household which yields a population estimate of 32,500.

A letter (December 29, 1970) from Joan Handelman, a research assistant on the NJPS project, states that ". . . preliminary data . . . suggests Jewish population may be as high as 38,000."

Prior to the NJPS, the Cincinnati Jewish community claimed a population of 28,000. Jewish leaders in Cincinnati felt that both of the NJPS based estimates were too high, but raised the traditional 28,000 to 30,000.

[3] Jack J. Diamond, "The 'Real' Jewish Demography," *Midstream,* Vol XXIV, No. 10, December, 1978, pp. 63-65.

the standard used to define a Jew includes a number of individuals who do not identify themselves as Jewish and thus are not recognized as Jews by the Jewish community. Fourth, the sampling methodolgy was probably flawed being based in part on a list of presumably distinctive Jewish-names.[4]

At the outset, it must be emphasized that the National Jewish Population Study was never seriously intended to develop accurate population estimates for *localities,* excepting, perhaps, those with very large Jewish components. It was designed to be representative of the entire United States Jewish population, and we do not question its representativeness in this report. Regardless of its purpose, however, National Study estimates of local Jewish population have been widely accepted by those communities specifically included in the survey. In the case of Greater Cincinnati, such acceptance seems inappropriate.

The high degree of uncertainty surrounding previous population estimates and the recent availability of data from the University of Cincinnati's Behavioral Science Laboratory Greater Cincinnati Survey[5] led to this study which sought a more accurate estimate of the size of the Jewish population in Hamilton County, and also sought to update information on various characteristics of Jews in the Cincinnati metropolitan area. (Although the Cincinnati metropolitan area includes nine counties in Ohio, Kentucky, and Indiana, the over-

whelming majority of Jews live in Hamilton County.)

To make these estimates, this report utilizes the results from the November, 1978 and May and November, 1979 versions of the Greater Cincinnati Survey (GCS).[6] The GCS is a cost-shared random probability telephone survey of citizens 18 years and older living in Hamilton County.

The first section of this report, dealing with the size of the Jewish population in metropolitan Cincinnati, is based on the 3,582 adults who were respondents of the three 1978-1979 surveys. Because the results of the GCS are significantly different from those of the National Jewish Population Study, several alternative approaches to estimating the Jewish population of Greater Cincinnati are examined and the results inspected for consistency with the GCS and with the National Study.

The third section discusses the results of a series of four questions on Jewish religious identification included on the May, 1979 Survey (1,182 respondents). These questions are comparable to four questions included in the 1971 National Jewish Population Study (NJPS, also known as "The Massarik Study" after its Director). The four questions asked: (1) whether the respondent identified him/herself as Jewish; (2) whether the respondent was born Jewish; (3) whether the respondent's father was born Jewish; and, (4) whether the respondent's mother was born Jewish. As in the NJPS, an affirmative answer to any of these questions is used to discriminate Jewish from non-Jewish respondents. A

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[4] This technique was probably inappropriate for Cincinnati. The city has a large proportion of descendants of German background as well as a large German-Jewish population. Perhaps a quarter of the names on the list of Distinctively Jewish Names are Germanic. With a large non-Jewish German population as well as a large German-Jewish population, the use of the DJN could produce atypical results in Cincinnati.

[5] *The Greater Cincinnati Survey* is conducted by the Behavioral Science Laboratory of the University of Cincinnati, Cincinnati, Ohio 45221, Dr. Alfred J. Tuchfarber, Director.

[6] The procedure of combining these three samples seems sensible. The sampling processes were identical and they were collected in a time span of one year. It is not possible that the Jewish population of Cincinnati could have varied significantly over that period without highly visible evidence of the change. There is no such evidence. Several population parameters, including size, from the three individual samples were compared with each other and with the combined estimates. They fell within 2 standard errors of one another.

population estimate based on the multiple-question discriminator can be compared with the NJPS estimate for Cincinnati.[7] The multiple-question discriminator can also be compared with the original single question on religious identification used for the GCS studies to see if it yields significantly different estimates of the size of the Jewish population.

The fourth section presents a more refined estimate of the size of Cincinnati's Jewish population than is provided in the first section. Specifically, the population estimate reported in section one will be corrected to account for specific subgroups of the Cincinnati Jewish community that would be missed by the GCS methodology, e.g., institutionalized aged. Finally, the fifth section of this paper will report on the population parameters readily available from the GCS and compare a few with similar parameters from the NJPS. This will illustrate the kinds of information that are easily gathered in GCS types of surveys, and will also show that most of the demographic information reported by the NJPS appears to be good, unbiased data. Some brief remarks will be added on the growing availability of cost-shared random probability telephone surveys.

1. Jewish Population Size

Each respondent to the Greater Cincinnati Survey represents a household. In the combined surveys, 2.2 percent of the respondents identified their religious pref-

erence as Jewish (see Table 1).[8] It does not follow, however, that 2.2 percent of Hamilton County's population is Jewish. That inference would be true if the size of Jewish and non-Jewish households were the same. They are not.

TABLE 1

Percent of sample identifying as Jewish	2.2
Average size of Jewish household	2.5000
Average size household in total sample	2.8757

Note: The data are weighted averages of the 1978-1979 samples.

Source: The Greater Cincinnati Survey

Fortunately, it is not difficult to correct for the difference in household size.

$$\text{Percentage of Jewish households in the sample} \times \frac{\text{Average size of Jewish family}}{\text{Average size of all families in sample}} = \text{Percentage of Jews in the total population sampled}$$

If we multiply the percent of Jews in the population sampled by the estimated number of people in that population, we have an estimate of the number of Jews in the area from which the sample was drawn. Using the data in Table 1, we can make such an estimate. The estimated 1980 population of Hamilton County is 1,000,340. Therefore, the Jewish population is estimated to be $(2.2 \times \frac{2.5000}{2.8757} =) 1.913$ percent of the total population, and the Jewish population of Hamilton County is

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[7] The initial GCS tabulations revealed that 6 of the 84 respondents who identified themselves as Jewish were black. While there are some black members of Jewish congregations, they certainly number less than 100 in total. The six blacks in the sample are probably members of a "Black Hebrew" sect which is not considered Jewish by any religious authority. The measures of religious identification, therefore, were recoded to count blacks as non-Jews regardless of their stated religious preference.

[8] Any respondent answering the phone was asked questions about him/herself and about the household. It was assumed that the entire household shared the respondent's religious preference. While this assumption might introduce some error into our estimates, it is extremely unlikely that the error could be significant.

estimated to be ($\frac{1.913}{100}$ x 1,000,340 =) 19,132 persons.[9]

Because this estimate is far below the commonly accepted figure of 30,000 Jews in Greater Cincinnati, it will be useful to examine the potential for error in the GCS data. There have been other population surveys in the Cincinnati metropolitan area which have included a religious preference question. One such survey sought data on the "aged" in Hamilton County and another on "adults" in the City of Cincinnati. It is possible to use these data to generate estimates of the total Jewish population of Hamilton County. Such estimates can then be checked for consistency with the 1978-1979 GCS survey data and with the National Jewish Population Survey data.

Based on the sample size of the combined GCS studies, 3,582, we can be 95 percent confident that the proportion of Jewish households in Hamilton County is 2.2 percent plus or minus .4804 percent.[10] With high probability we expect the proportion of Jewish families in the county to be not less than 1.72 percent and not greater than 2.68 percent of all families. Using the same family size correction as above, $\frac{2.5000}{2.8757}$, we are 95 percent confident that the Jewish population is between 14,958 and 23,307, say 15,000 and 23,500.

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[9] This estimate was obtained from the Ohio-Kentucky-Indiana Planning Commission, Cincinnati, Ohio. Very recent preliminary data from the United States Census of 1980 indicates a population for Hamilton County that is considerably smaller than that estimated by the OKI Planning Commission. While the OKI estimate may be high, there is some evidence that the U.S. Census figure is low. We are not competent to join the argument. If the preliminary U.S. Census figure, 830,675, is used as the true population of Hamilton County, the Jewish population estimate would be 15,891.

[10] For 95% confidence, the limits = $p \pm 1.96\, s_p$ where

$s_p = \sqrt{\frac{p(100-p)}{n}} = \sqrt{\frac{2.2(100-2.2)}{3582}} = .2451$. Therefore,

the upper limit = 2.2 + 1.96(.2451) = 2.68 percent, and the lower limit = 2.2 - 1.96(.2451) = 1.72 percent.

It is also instructive to ask the following question: "What are the chances that we could have found a Jewish household percentage of 2.2 if the actual population is 30,000?"

It is not difficult to answer this question. Thirty thousand is almost precisely three percent of Hamilton County's population. We can transform this percentage of "percent of households" by using the reciprocal of the family size adjustment factor used earlier. We then have: $3.0\% \times \frac{2.8757}{2.5000} = 3.45\%$. The probability that a sample of 3,582 households would yield a result of 2.2 percent when the actual figure is 3.45 percent is about 1 in 50,000,[11] an unlikely event to say the least.

2. Consistency Checks

Thus far, we have shown that the Jewish population of Hamilton County appears to be considerable less than the generally accepted of 30,000. Further, we have shown that it is extremely unlikely that the GCS data could have resulted merely by chance if there were actually 30,000 Jews in the area. In recent years, there have been two additional Behavioral Science Laboratory studies from which we can derive estimates of the total Jewish population, even though neither of the studies was intended for such a purpose. Because both of these were special purpose studies, they cannot be combined with the 1978-1979 GCS Behavioral Science Laboratory surveys and we will not use them to enrich our data base. They will serve only as general consistency checks. We can examine them to see if they support the GCS-based Jewish population estimate or if they support the much larger estimate made by the NJPS.

In March of 1978, the Behavioral

[11] $z = \dfrac{2.2 - 3.45}{\sqrt{\dfrac{3.45(100-3.45)}{3582}}} = -4.10$ standard deviates, which yields a one-tail probability of .00002

Science Laboratory conducted a survey of the aged (60 and over) in Hamilton County. The size of the BSL sample was 862, of whom 3.25 percent identified their religious preference as Jewish. If we assume that this sample yields a reasonably unbiased estimate of the proportion of the population of all aged who are Jewish, we can argue as follows: because the aged are 15.0 percent of the total Hamilton County population, and because 3.25 percent of these profess to be Jewish, then there are

$$\frac{3.25}{100}\left[\frac{15.0}{100} \times 1,000,340\right] = 4,877$$

Jewish aged in Hamilton County. Further, the 1978-1979 CGS survey indicated that 25.97 percent of the Jewish population in this county are aged. Our estimate of 4,877 aged Jews is, therefore, 25.97 percent of the total Jewish population in the county. This gives us a population estimate of 18,788 which is generally consistent with the BSL population study but is not consistent with the Massarik study.

In January of 1978, the BSL conducted a study of adults in the City of Cincinnati. In a sample of 2,407, 2.5 percent answered "Jewish" to the religious preference question. As with the aged survey, this percentage can be used as a basis for calculating an estimate of the Jewish population of Hamilton County.

Again assuming that 2.5 is a reasonably unbiased estimate of the percentage of Cincinnati city adults who are Jewish, we can argue in the following way. The Cincinnati City Planning Commission estimates that the city had a population of 414,686 in 1978. Of these, 71.61 percent were adults, 18 years or older. This yields an estimate of (414,686 x .7161 =) 296,957 adults in the city. If 2.5 percent are Jewish, we have (296,957 x .025 =) 7,424 Jewish adults in the city. Now the GCS studies combine to fix the average Jewish city family size at 1.9333 with .2000 children. (Suburban families are larger and have a greater number of children per family.)

Thus, in the city there are (1.9333 - .2000 =) 1.7333 Jewish adults per family, which means that ($\frac{1.7333}{1.9333}$ =) .897 of the Jewish city population are adults. Because there are an estimated 7,424 Jewish adults in the city, we have ($\frac{7,424}{.897}$ =) 8,276 people as an estimated total *city* Jewish population. Finally, the GCS results tell us that 42.5 percent of Hamilton County Jews live in the city (rather than in the suburbs). It follows, therefore, that there are ($\frac{8,276}{.425}$ =) 19,474 Jews in Hamilton County. Once more, this estimate is generally consistent with the population studies conducted by the Behavioral Science Laboratory, but is not consistent with the NJPS.

There is one final consistency check that is easily made. A recent (Fall, 1979) count of temple and synagogue membership revealed that Greater Cincinnati congregations had approximately 5400 member units.[12] At the outset we should note that congregational membership lists will under-represent young single adults and elderly persons. Nonetheless, if we assume that each membership unit represents a separate household, a highly conservative assumption for this argument, we can expand congregational membership to a total population estimate.

The only available data on the proportion of Jewish households claiming temple or synagogue membership are contained in the NJPS. That study estimated that 71.3 percent of Cincinnati Jewish households belonged to one congregation, and than an additional 5.3 percent belonged to more than one congregation.[13] If we assume, again conserva-

[12] Such counts are often inaccurate because membership lists are slow to be updated to reflect member deaths and in-and-out migration. It seems very likely, however, that the estimate is acurate within ± 200 member units of the true member.

[13] National Jewish Population Study data on the characteristics of Cincinnati's Jewish population are taken from an untitled, mimeographed document sent *(continued, see footnotes on next page)*

tively, that the 5.3 percent belong to not more than two congregations, we can write

$$\frac{71.3}{100} X + 2 \left(\frac{5.3}{100}\right) X = .819\ X = 5,400$$

where X is the total number of Jewish households;

$$X = \frac{5,400}{.819} = 6,593 \text{ households.}$$

Because 2.5000 is the number of persons per Jewish household, we have (6,593 x 2.5000 =) 16,483 persons, which is generally consistent with the BSL population study, but is not consistent with the NJPS.

All of the assumptions in deriving this population estimate are "conservative" in that they will tend to generate a larger final estimate of the Jewish population, i.e., nearer the traditional 30,000. Let us make one further conservative assumption. Because we have cast some doubt on the validity of the National Jewish Population Study estimate of the Greater Cincinnati Jewish population, let us assume that their estimate of the proportion of the Jewish households with congregational membership is overestimated by 25 percent, a massive error if it were in fact true. If such an error had been made, we would have

$$81.9 - \frac{25}{100} (81.9) = 61.4 \text{ percent}$$

of the Jewish households with congregational memberships. As above $\left(\frac{5,400}{.614} =\right)$ 8,795 households which expands to (8,795 x 2.5000 =) 21,987 persons. This population estimate is still consitent with the BSL study and not consistent with the NJPS.[14]

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to the Jewish Federation of Cincinnati by the NJPS. National data on the Jewish population are from Fred Massarik and Alvin Chenkin, "Jewish Population in the United States — 1972," in Morris Fine and Milton Himmelfarb (Eds.) *American Jewish Yearbook — 1973,* Jewish Publication Society, Philadelphia, 1973.

[14] The reader will note that this estimation procedure is not sensitive to reasonable errors in the number of congregational member units. Each 100 member units represents 100/.819 or 100/.614 households (122 or 163), and these households, in turn, represent 305 or 408 persons. We are assured that an error in estimating congregational membership large enough to invalidate our argument is not possible.

3. Different Measures of Jewish Identification

It remains to consider the probable impact of the different definition of "Jewish" used by the NJPS. Table 2 shows the results of the May, 1979 Greater Cincinnati Survey which included religious identification questions similar to those used by the National Study.

TABLE 2

Question	Proportion of sample identifying as Jewish n = 1182
1. What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion or no religion?	2.2%
2. Do you *presently* consider yourself Jewish?	2.3
3. Were you *born* Jewish?	1.9
4. What about your *father* —was he *born* Jewish?	2.2
5. What about your *mother* —was she *born* Jewish?	2.2
6. Proportion Jewish based on Jewish identification scale (questions 2-5)	2.7

Question 1 is the standard GCS religious identification question. Affirmative answers to any one of Questions 2-5 gave a discrimination comparable to the NJPS. The proportion identified as Jewish by the broader test is shown as Item 6 in the table above. The extended definition yields a population estimate

$$\frac{2.7}{2.2} = 1.227 \text{ or } 22.7 \text{ percent}$$

larger than the GCS estimate of 19,132, giving (1.227 x 19,132 =) 23,475 persons.

It is clear, therefore, that the NJPS extended definition of a Jewish person cannot, by itself, account for the difference

between the GCS and NJPS results. In absolute terms, the extended definition counts roughly 4,300 individuals with some Jewish background who do not identify themselves as Jewish and who do not function as a part of the Jewish community.

The extended definition, however, leads to some interesting observations. For instance, we note that a higher proportion answered affirmatively to the question "Do you presently consider yourself Jewish?" than said that they were born Jewish. A large majority of those who consider themselves Jewish now, though they were not born Jews, probably have a Jewish spouse. The fact that a higher proportion consider themselves Jewish than were born Jews suggests that intermarriage may have resulted in net gains for the Jewish community rather than losses as is commonly assumed. This issue deserves further research on a national level.

4. A Population Estimate

While it seems certain that the JNPS seriously overestimated the Jewish population of Greater Cincinnati (remembering that the National Study was not designed to make such an estimate), it also seems certain that the GCS result is an underestimate, though far less serious.

There are several reasons for this conclusion. First, the GCS does not include individuals in institutions, thereby excluding institutionalized aged, perhaps 400 persons. Second, because the percentage of resident college students with private telephones is somewhat less than the percentage for the general population, resident college students will be under-represented in the telephone sample. There are approximately 3,000 Jewish students attending the University of Cincinnati, the Hebrew Union College/ Jewish Institute of Religion, resident student nursing programs, plus other area colleges and post-secondary educational institutions . Some commute from local homes and some do have private

telephones. College students could add another 1,000 persons to the list of those who might be under-represented in the GCS results.[15] Third, as indicated earlier, the GCS does not extend outside of Hamilton County, thereby excluding the surrounding Ohio counties, Northern Kentucky, and Southeastern Indiana. There is little solid data on the number of Jews who live in these areas and there has been some noticeable movement of Jews from the northern suburbs of Cincinnati into Butler County. It is estimated that 2 percent of Greater Cincinnati's Jewish population is excluded by not including these areas in the GCS.[16] This might add another 400 people. Finally, we can add an additional 100 persons to insure that black Jewish families are properly included (see Footnote 7).

Summing up, we have

Institutionalized Jews (mostly aged)	400
Students	1,000
Out of county residents	400
Blacks	100
Total	1,900

Adding this correction to the GCS result, we have $19,132 + 1,900 = 21,032$, say 21,000, as a "best estimate" of the Jewish population of Greater Cincinnati.[17]

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[15] It might be argued that resident university students are not properly included in a population estimate for Greater Cincinnati. The Jewish Federation of Cincinnati provides considerable subvention for a Hillel Foundation and other social services are available to students, so we included them. If the reader would prefer to exclude this group, the population estimate should be adjusted accordingly.

[16] See David P. Varady, Samuel J. Mantel, Jr., *et al.,* Suburbanization and Dispersion: A Study of Cincinnati's Jewish Population." Paper presented to the meeting of the Association of American Geographers, Louisville, Kentucky, April 15, 1980.

[17] If the preliminary U.S. Census figure for Hamilton County is accepted, the "best estimate" would be $15,891 + 1,900 = 17,791$, say 18,000.

5. Population Parameters of the GCS and the NJPS

In the previous section we argued that the NJPS estimates of Greater Cincinnati's Jewish population were in error. It does not necessarily follow, however, that NJPS estimates of various demographic characteristics of Cincinnati Jews are also in error. The GCS was not constructed to test the validity of NJPS findings, but it is possible to compare the few parameters which were estimated by both surveys—even though they were estimated on slightly different bases. Table 3 shows such a comparison.

The first two measures reported in Table 3 are not significantly different. The education measure shows a significant difference between the two studies, but we report it here to illustrate the fact that when comparing different data sources, great care must be used in reaching conclusions.

TABLE 3

Comparison of NJPS and GCS Selected Parameters of Cincinnati's Jewish Population

Characteristic	GCS	NJPS[a]
Marital status[b]	64%	68%
Average number of Jewish persons per Jewish household	2.5[c]	2.5
Education, percent with bachelor's degree or higher	51%	41%

[a] Sample size for NJPS Cincinnati study is unknown. Sample size for GCS is 77. Differences in first two items are not significant.

[b] Marital status and education levels are for "Head of Household" for NJPS and for "respondent" for GCS.

[c] Actually, "family size" for GCS.

Sources: The Greater Cincinnati Survey and the National Jewish Population Study (see Footnote 11).

First, the different bases of collection

almost certainly do make a difference in this case. There are certainly more adults with bachelor's degrees than there are "heads of households" with bachelor's degrees, since there may be several adults per household but only one head. One would, therefore, expect the GCS figure to be higher than the NJPS number, and it is. In general, we have no reason to believe that the wealth of demographic data contained in the NJPS study of Cincinnati is not reasonably accurate.

TABLE 4

Average Family Size, Selected Jewish Communities

Community	Average Household Size	Year of Survey
1. Cincinnati	2.50	1978-9
2. Houston, Texas	3.08	1976
3. Kansas City, Missouri	2.66	1976
4. Columbus, Ohio	3.22	1969
5. Flint, Michigan	3.28	1967
6. Milwaukee, Wisconsin	3.01	1964
7. Providence, Rhode Island	3.25	1964
8. Detroit, Michigan	3.22	1963
9. Pittsburgh, Pennsylvania	3.41	1963
10. Rochester, New York	3.08	1961
11. San Francisco, California	2.82	1959
12. Washington, D.C.	2.97	1956

Source: The information on Jewish communities other than Cincinnati is from: Jewish Federation of Greater Kansas City. *The Jewish Population Study of the Greater Kansas City Area.* Kansas City, MO: The Jewish Federation of Greater Kansas City, 1977, p. 6.

One point on which the GCS and NJPS are in agreement is of particular significance. Table 4 shows that the average family size for Jews in Cincinnati (2.5) is

low relative to other Jewish communities in the United States. As shown, Kansas City is the community with the next lowest average family size 2.6. Albert Mayer, the director of Kansas City's study, noted that the fertility level of Jews in that city was below the replacement level, and that if this pattern continued, it would lead to a decline in the size of the Jewish population. We do not have comparable fertility information for Cincinnati's Jewish population. Given, however, the fact that the mean family size was lower in Cincinnati than Kansas City, this would strongly imply that the fertility level in Cincinnati is also below the replacement level.

The low fertility rate should be of concern to community leaders. It is likely to lead to a continuing drop in enrollment in Jewish afternoon and Sunday schools and demand for child-oriented social services. In the long run, the low fertility rate is likely to result in a reduction in the size of the local Jewish population. This could threaten the viability of existing religious and communal institutions and will contribute to a decline in the political strength of the Jewish community as well as its economic ability to support its institutions. The matter seems worthy of community concern and discussion.

One final population characteristic seems noteworthy in the context of this paper. The GCS estimates that 58 percent of Greater Cincinnati Jews live in the suburbs. This result is similar to a result we recently obtained in a study based on lists provided by the Jewish Federation of Cincinnati (see Footnote 16). That latter analysis indicated that 58 percent of the Jewish families lived in the suburbs. The fact that we obtained similar results from the two sources (the GCS and the Federation lists) is important. It argues for the legitimacy of using the Federation list as a data source for detailed analyses of the spatial distribution of the Jewish population (e.g., the proportions of families in

particular communities). Such detailed analyses are not feasible with the Jewish GCS subsample because of its limited size.

Conclusions and Policy Implications

We estimate that there are currently approximately 21,000 Jews living in the Greater Cincinnati area, less than 70 percent of the traditionally accepted figure. This estimate does not include approximately 4,300 individuals of Jewish background who do not identify as Jewish. It does include perhaps as many as 1,000 students who are, for the most part, temporary residents in Cincinnati. For communal planning purposes it seems proper to include the students and to exclude the non-identifying Jews based on the likelihood that the students would utilize Jewish social services and participate in communal fund raising activities while the non-identifying Jews would not.

It is appropriate to ask, "Is it possible that Cincinnati's Jewish population could have been between 30,000 and 40,000 in 1970 and as small as 21,000 ten years later?" Whereas such a possibility exists, we feel it is quite remote.[18] If such a massive population change had occurred, it is almost

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[18] Assume that the Greater Cincinnati Jewish population was 32,500 in 1970, which number is the lowest of the NJPS estimates. We can reduce that number by 22.7% to exclude non-identifying Jews, which gives us 25,123. If we assume that the U.S. Census preliminary data is correct, we would expect a decline of 830,675/924,018 = .899 (where 924, 018 is the U.S. Census figure for Hamilton County in 1970). 25,123 x .899 = 22,586. We must now add out-of-town college students (about 1,500), and the institutionalized aged (about 400) who were excluded from the NJPS count. No correction is needed for black Jews or for those living outside Hamilton County as the NJPS study would include both groups. 22,586 + 1,900 = 24,486 which is still significantly higher than the GCS estimate of 17,791 (based on the 830,675 figure for Hamilton County). Using the method used at the end of section I of this paper, if the true Jewish population were 24,486, the GCS estimate of 17,791 would have occurred approximately 1 in 500 trials.

certain that we would have found corroborating evidence. For example, we might have seen 1) a sharp decline in synagogue membership; and/or 2) a decrease in the birth rate, increase in the death rate, and drop in family size; and/or 3) a decrease in the membership and level of usage of various Jewish communal services.

None of the above is evident in Cincinnati over the past decade. Synagogue membership is stable. Local physicians think the birth rate has dropped slightly but add that the death rate has fallen also. Family size is unchanged over the decade. Social agencies report increased activity and while no agency keeps precise, unduplicated head counts, they report seeing more individuals, not fewer. While we cannot be certain that Cincinnati's Jewish population has not decreased by more than 30 percent in the past ten years, there is very strong circumstantial evidence that such has not happened.

Clearly more research is needed. Jewish communities without convenient and inexpensive assistance in surveying their populations nonetheless have great need for demographic information if they are to serve their people. It seems to us that if a sufficient number of communities can develop the sort of information reported here, and then can relate their results to levels of synagogue membership, Jewish Federation lists of donors and the like, it is possible to search for stable relationships between population size as measured by survey and the proportions of the population belonging to synagogues, giving to the welfare funds, and so forth. If such stable relationships can be found, it then becomes possible to estimate Jewish populations in areas for which telephone surveys are infeasible or too expensive.

Cost-shared, random telephone population studies could be extremely valuable in meeting the above described need. For the most part, Jewish communities are forced to plan and operate human service delivery systems with the most primitive kinds of information about the nature and extent of the publics whom they are dedicated to serve. While the arguments against a religious question on the United States Census are well known, such objections hardly apply to random telephone survey methods because only a small sample of the total population is researched and these individuals are not specifically identified.[19]

The Greater Cincinnati Survey is typical of an increasing number of metropolitan surveys collecting valuable demographic and attitudinal information. The University of Michigan conducts a survey in the Detroit area. The University of California at Los Angeles conducts the Los Angeles Metro Survey. Indiana University conducts a survey on Indianapolis. Several other surveys cover entire states. In addition, there are many commercial survey firms, mostly oriented toward consumer marketing information or political information, e.g., The California Poll and The Gallup Poll.

The cost of adding questions to telephone surveys varies widely, the number of questions, the complexity of the questions, the size of the respondent population, and the profit/nonprofit status of the organization being a few of the variables that will affect the price. At this writing, Summer 1980, the cost of a question on the GCS is $300 for a respondent sample size of about 1200. It is probable that a community could conduct its own survey for $20,000-25,000. If several community organizations shared the cost, the price might easily be in line with the potential value received.

[19] In an earlier version of this paper we utilized the GCS results to compare the characteristics of Jews and non-Jews. See David P. Varady and Samuel J. Mantel, Jr., *Toward An Improved Estimate of the Size of the Jewish Population of Cincinnati.* Technical Report submitted to the Jewish Federation of Cincinnati, March, 1980.

The reader may be interested in consulting the rapidly expanding literature on telephone survey techniques. In recent years, for example, *Public Opinion Quarterly* has published many such articles.