THE NATIONAL JEWISH POPULATION SURVEY SAMPLE DESIGN

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The Jewish population of the United States is about three percent of the total United States population which makes Jewish households a relatively rare item throughout much of the country.   Indeed, in New York City where Jews are about one-fourth to one-third of the popu-lation, they are still a minority group with respect to area sampling.

What makes sampling the Jewish population a feasible objective is the use of a combination of area sampling techniques and lists based upon the facts that: a)   U.S. Jewish population is concentrated in a relatively small proportion of those metropolitan areas in which they reside.   Hence, within the "proper neighborhoods" Jewish housing unit densities do rise considerably. b)   Lists do exist for a considerable portion of the Jewish population.   Furthermore, these lists improve their coverage as the size of a Jewish community declines.

Hence, through a combination of area sampling of Jewish neighborhoods, the use of lists, and an area search technique outside of the so-called Jewish neighbor-hoods,   it is possible (but not easy) to draw a meaning-ful probability sample of the United States Jewish popu-lation.

What follows is an attempt to outline the various analytical components and decisions which have gone into the creation of our present sample design and its operational definitions.

1. Universe and Sample Sizes

Based upon cost, field time, and sampling error
considerations, the survey design committee has decided
upon a sample size of 10,000 interviews with housing
units containing one or more present (or former) Jews or
people one (or both) of whose parents were Jewish.

Using published data from the March, 1957,
survey of major U.S. religious groups conducted by the
Bureau of the Census, it has been possible to develop an
initial estimate of the number of Jewish housing units.
This cited report gives the number of Jewish housing
units as 1,650,000 as of March, 1957, which still leaves
an updating task. We used as our new estimation date
January 1, 1970, or just two months short of 13 years
beyond this earlier estimate.

On the whole since the end of World War II the
national growth rates for population and housing have
averaged around 1% per annum. We also know that the
Jewish population growth rate has been somewhat below
this national figure. The question is just how much
below? It seems reasonable to assume that the Jewish
growth rate has been around half of this national rate.
With this position, a reasonable estimation is that the
number of Jewish housing units have increased 6.5% since
the time of the Census Bureau figure. This gives 107,250
which might just as well be rounded off to 100,000.
Hence, as of January, 1970, this approach estimates the
number of private, civilian U.S. Jewish housing units
at 1,750,000.

But if one applies the fairly reliable U.S. figure of 3 persons per housing unit to this estimation, the U.S. Jewish population, as of January 1, 1970, would be 5,250,000. I think that this is a low figure and should not be used.

If we assume that U.S. Jews, by 1970, represent 3% of the total U.S. population, as they did of the March, 1957, civilian population 14 years old and older, then the U.S. Jewish population could be around 6,000,000. This should be a somewhat high estimation.

We can use the often mentioned figure of 5,700,000 U.S. Jews. But as Morris Axelrod has pointed out, this apparently represents the number of Jews known to organized Jewish communities and misses an unknown percentage of marginally affiliated Jews.

The difficulty is that this survey seeks to determine the very figure needed to begin its design. Hence, for survey design needs, it has been agreed to work with the figures of 5,700,000 U.S. Jews in private housing units, 3 Jews per housing unit, and an estimated 1,900,000 Jewish housing units.

2. *The Overall Sampling Fraction*

At present the survey design committee estimates a response rate of 83%. Furthermore, as the first step in designing a disproportionate probability sample, it has been decided to slightly undersample the Jewish population of New York and oversample the Jewish population in the rest of the country. This results in an overall sampling

fraction of 1 in 131 Jewish housing units outside of the
New York Area and 1 in 197 Jewish housing in the New York
Area.

3. *The Primary Sampling Units*

In general the basic primary sampling units
(psu) are single counties or groups of contiguous counties.
Grouping of counties has been based upon similar sizes of
their Jewish communities and upon the decision to have
psu's which contain around 2100 Jewish housing units.

With these size requirements agreed upon, it is
possible to include in the survey linked clusters of
rather small Jewish communities with the expectation that
no regular field force would be created in such places.
Instead, these very small local communities would be asked
to develop a master list of local Jews and to distribute
our schedules. Also there would be reduced area sampling
in these small communities. Following upon this method
of data gathering would be careful schedule editing at
national headquarters (or a regional headquarters)
coupled with long distance telephone calls to respondents
giving incomplete data.

4. *Size of Strata*

It has been decided not to establish a field
force for less than 100 local sample housing units. At
an overall sampling fraction of 1/131, this would require
13,100 Jewish housing units or, using 3 Jews per Jewish
housing unit, at least 39,300 Jews capable of being served

by organized Jewish communities. For simplicity's sake,
the size of a stratum has been fixed at 40,000 Jews.

Apart from those large Jewish communities that
fall into the sample with certainty, the following strati-
fication criteria have been used:

a)   Size of Jewish community - psu's are sampled
with probability proportional to their measure of size.

b)   Geographic location - strata are formed of
psu's lying within the same state or contiguous states.

All told, then, strata consist of relatively
similar size Jewish communities in the same or adjacent
states.

5.   The Stratification System

Following these rules the counties of the United
States have been formed into 39 strata for the national
Jewish Population Survey. The first 18 of these strata
represent themselves and are composed of the very large
United States Jewish communities running in size from
New York City to Milwaukee, Wisconsin. The other 20 strata
are composed of smaller Jewish communities down to
groupings of the very tiny ones composed of many Jewish
communities whose counties might run through several
adjacent states. Finally, there is yet a 39th stratum
which consists of all the counties in the United States
with no known Jewish population. Eventually, we shall
select from amongst the counties of this last stratum at
the rate of 1 in 131. Then, we shall search the member-
ship lists of statewide Jewish organizations covering these
counties, local phone directories, and local city

directories to see if we can find the names of Jews. If
we do, we shall use such resident Jewish families as
informants about the number and location of other Jews
resident in the sampled counties. In addition to this,
we shall draw a small area sample in these counties and
screen the housing units contained in the area sample
units for Jews.

From amongst the 38 strata with a known Jewish
population we have selected one primary sampling unit with
probability proportionate to its measure of size to
represent the rest of its stratum. When a stratum contains
just one psu, as in the case of the first 18, that psu
represents just itself.

As a result of all this, the actual work of the
survey will be concentrated in 110 counties containing 70
Jewish communities. I will not belabor you with a detailed
presentation of the location, nature, and counties of these
primary sampling units. Such information is, of course,
available upon request.

6. Stratification Within Sample Primary Sampling Units

Within each of the sample primary sampling units,
second level strata have been formed by use of the distinc-
tive Jewish names technique so ably developed by Professor
Massarik. In brief, this technique utilizes the ratio
between certain distinctive Jewish names and the rest of
the Jewish population to estimate the total Jewish popu-
lation. Utilizing this approach it has been possible to
divide the postal zones of each of the sample areas into
those with large numbers of Jewish households, and low

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numbers of Jewish households. Then, from within the
second level strata a sample of postal zones has been
selected. Next, within each of the postal zones thus
sampled, blocks have been selected to complete the area
sample design.

Where it has been possible to develop lists of
known Jewish households in sampling areas such as
Cincinnati, Cleveland, and Miami, the lists are considered
to be part of the large numbers Jewish stratum. Then,
list samples are integrated with area samples by striking
out from sample blocks housing unit lists, all those
housing units which also appear on our lists of Jewish
households.

7. *The Sampling Equations*

The specifics of the sample design can best be
seen by referring to the sample equations developed for
the three types of Jewish stratum.

A. Large Numbers Jewish Stratum

$$\frac{1}{131} = \frac{PSU}{P.Strata} \ X \ \frac{J.Pop.}{Sec.J.Pop.} \ X \ \frac{(P.Strata) \ (Sec.J.Pop.) \ (2)}{(PSU) \ (J.Pop.) \ (131)} \ X \ \frac{1}{2}$$

Where $\dfrac{PSU}{P.Strata}$ is the probability of selection of a sample

psu within its primary stratum.

$\dfrac{J.Pop.}{Sec.J.Pop.}$ is the postal zone selection rate within its

secondary stratum.
The third term is the selection probability per blocks;
the $\frac{1}{2}$ is the within-block probability for its housing

units. Accepting just one-half of the Jewish hu's per
sample block guards against very large clusters of inter-
views with the accompanying increase in variances.

B. Moderate Numbers Jewish Stratum

$$\frac{1}{393} = \frac{PSU}{P.Strata} \times \frac{(4) \ J.Pop.}{(3) \ Sec.J.Pop.} \times \frac{(P.Strata) \ (Sec.J.Pop.)}{(PSU) \ (J.Pop.) \ (524)}$$

This equation has an overall sampling fraction that is
one-third that of the high numbers stratum. When any sub-
selections of suspected non-Jewish housing units is done,
the resultant added probability term would appear at the
end of this sampling equation and in its overall sampling
fraction. Typically, the size of a secondary grouping
which would yield one sample secondary unit would be 4900
Jewish housing units.

C. Low Numbers Jewish Stratum

$$\frac{1}{655} = \frac{PSU}{P.Strata} \times \frac{H}{Total \ S.Hu} \times \frac{(P.Strata) \ (Total \ S.Hu) \ (2)}{(PSU) \ (Hu) \ (1310)}$$

Here, the secondary selection probability term is based
on total (Jewish and non-Jewish) housing unit estimates
for each secondary unit. Again, subselections of
suspected non-Jewish hu's would introduce additional
probability terms. Typically, the size of a secondary
stratum which would yield one sample secondary unit would
be 79,000 housing units.

8. Operational Procedures in the Three Strata

In the blocks sampled from the heavy numbers
stratum, we shall list all housing units on special field
forms which indicate whether even or odd halves of the

listings are to be screened for Jewish housing units.
But, in the moderate and low numbers strata the inter-
viewers will be instructed to list all the housing units
in the sample blocks and to obtain the names of the occu-
pants of these housing units (together with the ethnic and
religious characteristics of the blocks). Then, these
forms will be returned to a local supervisor. The super-
visor will utilize the information as to householder name
and other block characteristics to allocate the listed
housing units to the categories of possibly Jewish and
non-Jewish. Then, the interviewers will be instructed to
return to all the possibly Jewish housing units and screen
for Jewish respondents. However, a subsample of one in
ten of the supposedly non-Jewish households will be
selected for screening purposes. In this way, we restrict
our very expensive field work search for Jewish respon-
dents to a much smaller subsample and yet avoid the bias
which would result from excluding unknown numbers of
Jewish respondents who live away from the main Jewish
areas and who do not have identifiable Jewish names.

9. *The Weighting Scheme*

As presently designed this disproportionately
allocated sample will require weighting interviews that
do not come in at the basic design rate of 1 in 131.
This means that Jewish interviews obtained in the moder-
ate numbers stratum will need to be weighted by 3 if they
come from households thought to be Jewish or by 30 if
they come from households originally thought to be non-
Jewish. Jewish interviews obtained in the low numbers

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stratum from households originally thought to be Jewish
will have to be weighted by 5 and by 50 if obtained from
households originally thought to be non-Jewish. All
Jewish interviews obtained from lists will be sampled at
1 in 131 and will not need to be weighted.

Of course this weighting scheme introduces
inefficiencies into the sampling design and will also
result in increased sample variances. However, there is
no other way to get our job done within budget limitations
together with a search for Jewish respondents who do not
live in so-called Jewish neighborhoods or are not found
on lists of Jewish households. Furthermore, our limited
knowledge about the spread of members of the Jewish
community throughout the various areas in which they
reside make these design compromises necessary for this
first national Jewish population survey. The next time
this survey is done, we will have all the knowledge gained
from this first survey's design and analysis to improve
subsequent sample and schedule characteristics.

10. Household Respondent

Within the sample households we shall obtain
most schedule information from any knowledgeable adult.
This is possible because most of the survey's questions
pertain to household characteristics or to characteristics
of all members of the housing unit. For one survey
section we shall select one adult at random from amongst
those in the housing unit and administer attitude questions
to this person. Of course, when we do this an additional
weighting scheme to account for the variable number of

adults per housing unit will have to be applied to the
above described sample hu weighting procedure.

11. Some Analysis Techniques

Basically analysis tasks will be divided into
three major groupings. First of all we shall seek numer-
ical estimates of total United States Jewish population,
regional Jewish population, and the Jewish population of
our major cities such as New York and Los Angeles. These
will be reached by estimation techniques which compare
the number of Jewish households to the known area house-
holds from the 1970 census and use the resultant ratios
as adjustment factors.

Secondly, we shall produce a body of percentages
indicating the proportions of the nation's Jews that fall
into various demographic, migration, socio-economic, and
Jewish identity categories. Also, we shall produce a
large body of statistics on various Jewish vital rates
such as birth rates, marriage rates, death rates, and
divorce rates.

Finally, we shall use various statistical tech-
niques such as factor analysis and the University of
Michigan automatic detector procedure to probe the ways
in which the basic survey variables combine with one
another to form socio-economic and identification pat-
terns in the Jewish community. Such analysis approaches
will seek to build upon prior schemes of the nature of
American Jewish involvement that have been built upon
earlier surveys in the Chicago, Los Angeles, Providence
(Rhode Island) and Detroit Jewish communities. Hence,

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this phase of the analysis will see the testing of previously developed hypotheses about the nature of American Jewish life and their rejection or elaboration. In many ways this represents some of the survey's most fertile areas of investigation. Of concern here, too, would be the investigation of characteristics associated with intermarriage and conversion and with varying degrees of participation in Jewish communal organizations.

Following this we shall endeavour to build various mathematical models, employing the systems of recursive equations, dependence analysis, and path coefficients recently developed in the social sciences. The basic purpose of these involved statistical and mathematical approaches will be to try to knit all the various findings on Jewish numbers, percentages, rates, behavior attitudes and characteristics into one illustrative model for the United States Jewish community. This model could then be tested against later Jewish developments and trends in order to become a better predictive device.

In addition to these main lines of analysis, there will be innenumerable byproducts which can be explored such as the different characteristics of Jews with different Jewish educational background or different Jewish experiences as adolescents. We could also explore the differential characteristics of the memberships of the important national Jewish organizations. Finally, we would seek to determine the differences between the Jews known to the Jewish community and those Jews not found on Jewish communal lists. To the degree that this can be done, future research in the Jewish community can concentrate upon lists of Jews and still be able to correct for

the bias resulting from not investigating a sample of the
entire Jewish community.