

## CONTEMPORARY JEWISH FERTILITY: DOES RELIGION MAKE A DIFFERENCE?\*

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*Data from the 1990 National Jewish Population Survey are used to examine levels of and trends in Jewish fertility in the United States. Differences are examined between contemporary Jewish and non-Jewish fertility as well as within Judaism. Jewish fertility levels continue to be below those for all white American women, largely due to the substantially higher educational level of American Jews in comparison with others combined with a strong negative association between education and fertility.*

*There are significant differences in fertility within the Jewish population. The Orthodox have substantially more children than other groups. However, this has little overall impact on Jewish fertility because of the very small proportion of Orthodox in the Jewish population. In multivariate analyses, synagogue attendance and involvement with the holiday rituals show a strong positive association with childbearing. The nature of the causation between these factors remains ambiguous and may be life-cycle related.*

*In general, results suggest that current fertility levels are perhaps too low to assure long-term population replacement. Based on current patterns, it is not likely the that current generation of childbearing age will bear, on average, over two children by the end of their childbearing years.*

Available evidence on Jewish fertility trends is fairly consistent and suggests that Jewish fertility levels during this century have essentially mirrored American fertility, but at slightly lower levels (Mosher, Williams and Johnson, 1992; Goldstein, 1981; Della Pergola, 1980; Watts, 1980; Goldscheider, 1967). Existing differences partly reflect socio-economic differences between the Jewish and overall population and perhaps partly reflect the better ability of the Jewish population to plan their fertility (e.g., Fishman, 1988; Lazerwitz, 1980). Jewish fertility has followed the peaks and troughs of American fertility, presumably for similar reasons. Historically, there has also

been evidence of significant differentials *within* the Jewish population. Specifically, sub-groups identified more closely with the religion have had somewhat higher fertility than more assimilated Jews (e.g., Cohen and Ritterband, 1981; Lazerwitz, 1980). Research often addresses the issue of whether or not socioeconomic status is solely responsible for religious differentials in fertility within the Jewish population and between the Jewish and overall populations, or whether religious factors continue to play a role. Attempts to resolve the question have generated inconsistent findings (see, for example, Harrison and Lazerwitz, 1982; Cohen and Ritterband, 1981; Lazerwitz, 1980 and Goldscheider, 1967 for some divergent views on this issue). This paper will consider further whether religious differentials in fertility within Judaism remain as of 1990 after controlling for socioeconomic factors.

Finally, and perhaps most importantly, the issue of whether or not fertility levels by themselves can sustain the Jewish population in the longer run will be considered. From an intellectual perspective, significant socioeconomic or religious differentials may be of great interest; however, if the sub-groups with the highest fertility represent only a small proportion of the overall Jewish population, the implications are quite different than if high fertility is linked with relatively large, or at least growing population segments.

## THE DATA

Our data are drawn from the 1990 National Jewish Population Survey (NJPS), sponsored by the Council of Jewish Federations. The 2441 households in this survey are randomly drawn from the General Market Excel Sample phone survey maintained by the I.C.R. Survey Research group. The interviews were completed during the Spring of 1990 and are believed to represent the overall American Jewish population as of that date (Kosmin, Goldstein, Waksberg, Lerer, Keyser and Scheckner, 1991).

The data for this survey were collected in three phases. The initial screening phase of the survey obtained information about the religious preferences of 125,813 randomly selected adult Americans and the Jewish qualifications of their households. It was determined initially that 5,416 households contained at least one person who qualified as "Jewish" or Jewishly affiliated as determined by the screening questions listed below. During Stage II, the inventory stage, attempts were made to re-contact households to re-qualify potential respondents and solicit participation in the 1990 NJPS. During this

procedure, a number of potential respondents dropped out of the survey sample due to changes in household composition or to disqualification upon further review.

Stage III, the final interviewing stage of the survey, yielded a total of 2,441 completed interviews with qualified respondents. The statistics reported here are drawn from a subset of these households. A detailed sampling report is available (Marketing Systems Group, 1991). Identification of qualified Jewish households and individuals was based on responses to a series of four questions:

1. What is your religion? If not Jewish, then . . .
2. Do you or anyone else in the household consider themselves Jewish? If no, then. . .
3. Were you or anyone else in the household raised Jewish? If no, then . . .
4. Do you or anyone else in the household have a Jewish parent?

Households which provided positive responses to any of the above items were classified as "Jewish." Individual respondents in these households were then randomly selected by choosing the "Jewish" adult (according to any of the above criteria) whose birthday was the most recent preceding the survey date (termed the "last birthday" method). The study obtained personal information about all 6,514 persons in the surveyed households, not all of whom, of course, were Jewish, reflecting the mixed composition of the households in the overall Jewish population.

Since the focus of this study is on levels and differentials in current Jewish fertility, our focus is on those women in the survey who were between the ages of 18 and 44 and who, for the most part, identified themselves as currently Jewish. Given some ambiguity in the self definitions, we also define our sample of Jewish women not only on the basis of current religious affiliation, but "current denomination" as well. Respondents were included if they stated their *current religion* to be "Jewish." A subset of respondents who did *not* claim "Jewish" for current religion were included if they met the following criteria: if they claimed a Jewish *denomination* (Conservative, Orthodox, Reform, Reconstructionist, Just Jewish, Secular, Jewish & Other, Non-participating, Jewish, or Miscellaneous Jewish), and did *not* claim an active non-Jewish religion (current religion was "other" or "none"). Careful scrutiny of the religious lifestyles and background of this latter subset revealed that most did, indeed, identify with Judaism, for instance, by following Jewish rituals, having had Jewish education in their past, and having been raised or born Jewish. It should be noted that this

ambiguity affected only 61 of the 530 women included in our sample. While there is always some subjectivity involved in defining a religious population (see, for example, Goldstein and Kosmin, 1991), the criteria we used appears reasonable, given our larger research objective, to interpret contemporary fertility in terms of its actual and possibly future impact on the size of American Jewry.

While basic demographic information is available for *all* Jewish women of childbearing age in the interviewed households, much of the religious identity information is available only for respondents. Thus, our analytic focus will be two-fold: 1) examining basic demographic characteristics for all Jewish *women* (and regardless of whether or not they were respondents); but, 2) focusing on all female *respondents* when examining fertility-religious linkages. In both cases, we include women of all marital statuses. A comparison of several demographic characteristics (e.g., age and education) for female respondents and all adult females suggests that female respondents represent all Jewish women reasonably well. Our sample of all Jewish women of childbearing age is about 825 and the sample of Jewish respondents totals about 530. The cross-tabular material are all appropriately weighted using the household and population weights provided by the ICR research group to adjust for selective attrition in the final sample selection; the numbers behind the percents and rates in the tables represent the total population or respondents in the various age, education and religious denomination categories.

## DEFINING FERTILITY

There are a variety of ways in which the fertility of a population of childbearing age can be defined. For women approaching the end of their childbearing years, the average number of children born to women of a particular age is perhaps the best summary measure available. For younger women, measuring fertility is somewhat more complex as "children already born" may be far removed from ultimate fertility intentions. Additionally, to the extent that some groups of women (e.g., those with less education) may have begun childbearing earlier than others, comparing children ever born for younger women with different characteristics (e.g., educational attainment) must be done cautiously. Two groups of women with similar lifetime childbearing intentions may be pacing their childbearing very differently. For example, two groups of women may ultimately anticipate comparable family sizes, but one group may be having most of their children at early ages whereas the second group anticipate

having most of their children at older ages. For this reason, we use information on fertility intentions for younger women to complement information on children already born to make inferences regarding the likely lifetime childbearing patterns for younger women. Of course, information on childbearing intentions must always be interpreted cautiously; as we note, individuals and families can change their minds, reflecting a variety of future changes in life circumstances.

## JEWISH FERTILITY AND POPULATION REPLACEMENT

Given contemporary Jewish-American mortality levels, the average Jewish woman needs to have about 2.1 children to ensure the replacement of her generation. This statistic ignores issues associated with the tendencies of individuals to marry into or out of the religion and to raise their children as Jewish or non-Jewish. It additionally ignores the possibility of net gains or losses to the Jewish population associated with movements in and out of the country. That is, the estimate of 2.1 births per women represents the average number of children which need to be born by the end of the childbearing years. For Jewish women in the childbearing ages in 1990, the available evidence suggests that replacement fertility levels will not be reached. Jewish women 35 to 44 who are approaching the end of their fertile years have had about 1.5 children. Jewish women 25 to 34 indicate that they expect to have about 2.1 children, but their actual childbearing to date suggests otherwise. This number differs substantially between women with different denominational attachments and with different levels of education. Examining these patterns and how they vary between different Jewish sub-populations is of course the focus of this research.

*Comparing Jewish and non-Jewish fertility:* Jewish women have demographic characteristics which overtly differentiate them from the overall U.S. population. At least some of these characteristics are linked with childbearing propensities. The most obvious such characteristic is educational attainment. As may be seen in Table 1, there are major differences between Jewish and non-Jewish educational attainment at all the childbearing ages. In the primary childbearing ages of 25 to 34 and 35 to 39, substantially larger proportions of Jewish women have attained a bachelors degree or gone on to graduate study. For example, in the 25 to 34 year old category, 63 percent of Jewish women have at least a college degree compared with 24 percent for all white women; comparable statistics for 35 to 39 year olds are

67 percent and 23 percent respectively. Thus, to the extent that higher education is associated with lower fertility in contemporary American

Table 1. Comparative Education: Jewish and U.S. White Women

Percent Distribution: Years of School Completed					
	12 or fewer years school	Some college	College graduate	Graduate Education	TOTAL
Ages 18-24					
Jewish	34.8	41.5	20.1	3.6	100.0
U.S.	62.1	29.3	7.6	1.0	100.0
Ages 25-34					
Jewish	15.7	20.8	35.8	27.7	100.0
U.S.	54.1	21.9	17.0	7.0	100.0
Ages 35-39					
Jewish	7.1	25.8	31.2	35.9	100.0
U.S.	55.4	21.5	12.7	10.4	100.0
Ages 40-44					
Jewish	18.7	16.4	21.2	43.7	100.0
U.S.	58.6	19.1	12.0	10.3	100.0

Note: U.S. Statistics are from U.S. Bureau of Census, 1989

society, it should come as no surprise if Jewish fertility is lower than overall American fertility.

Table 2 clarifies how much of the difference in overall fertility levels between Jewish and all U.S. white women is intimately linked with these massive education differences. If one compares "children ever born" for Jewish and non-Jewish women *within* educational categories, differences tend to be modest (and somewhat erratic, reflecting modest sample sizes for some of the Jewish sub-groups). It may well be that *within* education categories, there are no systematic fertility differences between Jews and non-Jews. Only for the 18-24 year old category is Jewish fertility systematically below that of all U.S. women at all educational levels, reflecting at least in part the greater likelihood that Jewish women are still enrolled in school at those ages.

However, within age groups, overall Jewish fertility (both "children ever born" and "percent childless") is systematically substantially below U.S. fertility, reflecting, of course, the highest proportion of Jewish women in the lower fertility, higher education categories.

Table 2. Comparative Fertility Statistics: Jewish and U.S. White Women

	Ages 18-24		Ages 25-34		Ages 35-44	
	Jewish	U.S.*	Jewish	U.S.*	Jewish	U.S.*
Children Ever Born	0.11	0.35	0.88	1.29	1.51	2.00
≤ 12 yrs. school	0.26	0.49	1.83	1.58	2.34	2.21
Some college	0.05	0.13	1.10	1.20	1.36	1.95
College graduate	0.02	0.09	0.72	0.76	1.63	1.74
Graduate education	---	0.11	0.41	0.05	1.30	1.39
Percent Childless	96.0	77.1	55.4	35.1	25.0	16.8
≤ 12 yrs. school	84.0	68.2	23.1	23.9	14.5	11.7
Some college	97.7	90.5	43.0	38.4	27.7	16.3
College graduate	98.3	93.1	58.5	56.8	20.0	24.2
Graduate education	---	92.5	70.0	59.7	28.7	33.7
Total Expected	2.15	2.09	2.08	2.05		

\* U.S. Statistics are from U.S. Bureau of the Census, 1989, Whites Only

Jewish women clearly delay or reduce their childbearing to a much greater extent than the non-Jewish women. The 35 to 44 year old Jewish cohort have only had about 1.5 children on average and 25 percent remain childless compared with 2 children and 17 percent childless for their white non-Jewish counterparts. In this age category, only the least educated Jewish group, those with 12 or fewer years of school, are significantly above replacement (i.e., expect, on average, at least 2.1 children), but only a modest percent of all Jewish women fall in this category.<sup>1</sup> As may be seen in Table 3 (which standardizes Jewish women against the overall female educational composition), if

Table 3. Jewish Fertility Rates, Jewish Female Sample Standardized for the U.S. White Female Population Educational Composition

	18-24	25-34	35-44
<b>Children Ever Born:</b>			
Jewish Unstandardized	0.11	0.88	1.51
Jewish Standardized	0.18	1.38	2.02
U.S. White Women	0.35	1.29	2.00
<b>Percent Childless:</b>			
Jewish Unstandardized	96.0	55.4	25.0
Jewish Standardized	89.3	36.8	19.0
U.S. White Women	77.1	35.1	16.8

Note: U.S. educational composition from U.S. Bureau of Census, 1989

Jewish women had the educational mix of all white women, virtually all of the differences between the two groups in children ever born and in percent childless would vanish, except at the youngest ages.

*Fertility differences within the Jewish population:* The pattern or pace of childbearing for Jewish women can be clarified by contrasting cumulative fertility with fertility expectations, focusing (in Table 4) specifically on the association between education and fertility just for the Jewish women. Acknowledging the problems associated with making longitudinal inferences from cross-sectional data, some useful insights may nonetheless be gained. For the 25 to 34 year olds, the gap between cumulative and expected fertility widens considerably as one moves up the education ladder; the less educated have apparently completed most of their childbearing, if the expectations data can be believed, whereas the better educated anticipate that most of their childbearing is ahead of them. If expectations are realized, this 25 to 34 year old cohort would ultimately average about 2.1 children -- the number needed to "replace" their Jewish cohort -- assuming no net loss due to movements away from the religion.

An examination of the 35 to 44 year old group provides a somewhat different story. This cohort has borne an average of about 1.5 children and anticipates attaining about 1.7 children. When this age cohort was interviewed in the 1971 NJPS (at that time being about 16 to 26 years of age), they were anticipating substantially more, perhaps as many as 2.5 children (estimated from Della Pergola, 1981). Thus,

this cohort has clearly radically lowered their fertility expectations over the years, graphically demonstrating that expectations data need to be interpreted cautiously.<sup>2</sup> Acknowledging this caveat, making longitudinal inferences from the cross-sectional data of Table 4, the changes in fertility between the younger and older age group suggests that the better-educated will in all likelihood have the most substantial later childbearing. However, the college graduate group also may be the most likely to reduce their expectations as they grow older.

The education-fertility differentials we have highlighted have important substantive implications for Jewish fertility levels. We shift now to considering more directly the "religion" factor. Are there

Table 4. Mean Children Ever Born and Mean Children Expected By Age and Education for Jewish Women

	Mean Children Ever Born	Mean Children Expected	Percent of Childbearing "Completed"
Ages 25-34	0.88	2.08	42.3
12 years or less school	1.83	2.47	74.1
Some college	1.10	1.74	63.2
College graduate	0.72	2.20	32.7
Graduate education	0.41	2.06	19.9
Ages 35-44	1.51	1.72	84.9
12 years or less school	2.34	2.35	99.6
Some college	1.36	1.59	85.6
College graduate	1.63	1.79	91.1
Graduate education	1.30	1.53	85.0
Change in fertility 25-34 to 35-44			
12 years or less school	+0.51	-0.12	
Some college	+0.26	-0.15	
College graduate	+0.91	-0.41	
Graduate education	+0.89	-0.19	

major variations in fertility within the Jewish population according to the individual's formal religious identification (i.e., Orthodox-Conservative-Reform-Other) or according to the individual's religiosity, that is, specific involvement with the icons or rituals of the religion? From a demographic perspective, there are of course two aspects to this question. First, are there meaningful differentials, from a religious perspective and second, do they make a substantive difference? That is, are there sub-groups with fertility levels which are substantially above or below the average which are large enough to impact substantially on the overall level of Jewish fertility?

Table 5 suggests the considerable variability in religious identification and religiosity within Judaism, variations which are only moderately linked with age or education. It is emphasized that religion and ritual identifiers relate to the current status of the respondents and their families, not necessarily their religion or religiosity while growing up. As is well known, only very small percentages in any of the age or education categories identify themselves as Orthodox, the religious subgroup which is usually reported as having the highest fertility. Little systematic age variability may be noted with the possible exception of somewhat higher identification with Orthodoxy or conservatism and less identification with reform Judaism among the very youngest respondents. Others have found a similar trend towards a greater religious identification among the youngest Jewish adults (e.g., Mott and Mott, 1990; Goldscheider and Goldstein, 1988). In all age groups except the 18-24 year old category, respondents identifying with Reform Jews are the largest group, followed by Conservative Jews, "non"-attachment (which includes a small number of other ill-defined individuals) and finally Orthodox Jews.

From the perspective of ritual involvement, substantial proportions of Jewish households are involved in rituals associated with relatively infrequent (annual-based) holidays, but much smaller proportions carry out more traditional rituals associated with the (weekly) Sabbath or with the dietary laws. The one group showing systematic divergence in ritual involvement from the rest of the population are less educated women, i.e., those with twelve or less years of schooling. The pattern evidenced for this group is bimodal, with above average percentages involved in the more traditional continuing rituals (such as following the dietary laws or not handling money on the Sabbath) but below average percentages following the holiday traditions. This phenomenon is associated with age. The 18-24 year old age group is certainly less educated on average, and additionally is more likely to carry out traditional rituals. One might

hypothesize that this phenomenon partly reflects a greater likelihood that young adults are still in their parents' home and that many multi-generation households may be more likely to perform traditional rituals. In general, it appears that the more traditional ritual behaviors are followed by population sub-groups which include only a modest percent of the population.

Perhaps the best evidence of the considerable heterogeneity within the population is represented by the substantial proportions who indicate that they have a Christmas tree in the home. Having a tree is closely associated with intermarriage and the propensity for intermarrying couples to incorporate symbols from the religious heritage of both partners. Indeed, as documented in Kosmin et al (1991), a substantial proportion of younger "Jewish" couples include at least one partner who is or was not Jewish.

Whereas the least educated are most likely to follow traditional rituals, the most educated are somewhat more likely to be socially integrated into their religion in terms of belonging to synagogues, having mostly Jewish friends and living in "Jewish neighborhoods." The relevance of these separate dimensions of Judaism for fertility will be considered in a concluding multivariate analysis.

Table 6 synthesizes some statistics on marriage and fertility for the sub-groups affiliating with Orthodox, Conservative and Reform Judaism. It should be emphasized that the denominational affiliation of the respondents refers to their attachment as of the survey date in 1990 and could differ from their affiliation as of the time of their child(ren's) birth. While the limited sample size for the Orthodox group constrains our ability to make comparative statements, the overall data for women 18 to 44 suggest clearly that the Orthodox are more likely to be married much less likely to be childless, have a greater number of children to date, and indeed, expect to bear more children. They are the only group which exhibit fertility significantly above replacement level.<sup>3</sup>

For both the 25-34 and 35-44 year old groups, cumulative fertility for the Conservative and Reform groups are similar and quite low. For the 25 to 34 year old group, about 30 percent of the women have never been married and only about 40 percent have had children. While their completed fertility is very low, expectations, particularly for the Conservative, are much higher; Conservative women in this age category *expect* to ultimately have almost 2.3 children, suggesting the possibility of a relatively rapid pace of childbearing during their remaining childbearing years.

Table 5. Religious and Ritual Variations by Age: Female Respondents

	Religious Identification				Percent Following Selected Rituals <sup>1</sup>						
	Ortho	Cons	Reform	Other	% Lighting Sabbath Candles	% Attending Seder	% Using Kosher Meat	% Using Separate Dishes	% Lighting Hanukkah Candles	% with Christmas Tree	% not Handling Money Sabbath
<b>AGE</b>											
18-24	8.2	41.7	29.2	20.9	13.0	78.4	36.9	25.4	68.1	29.9	17.6
25-34	4.0	31.0	46.0	19.0	18.5	63.9	18.1	10.1	68.1	37.7	11.4
35-39	3.4	28.4	51.8	16.3	15.6	67.7	12.5	11.6	74.3	44.7	10.9
40-44	2.0	35.5	45.3	17.2	23.4	67.4	11.2	12.5	76.0	26.5	11.9
<b>EDUCATION</b>											
High School or Less	3.9	32.7	34.7	28.8	19.4	58.3	22.2	20.7	61.0	49.5	23.8
Some College	3.4	37.5	49.3	9.7	10.5	71.1	16.5	10.5	67.5	33.2	9.9
College Grad.	5.0	24.9	50.7	19.3	19.6	75.9	16.9	11.4	73.4	36.2	8.6
Grad. Training	3.1	32.7	47.6	16.6	17.5	73.5	12.6	13.0	76.7	29.8	9.3

Table 5. Religious and Ritual Variations by Age: Female Respondents (cont'd)

	Social Networking				
	% Synagogue Member	% with Most Friends Jewish	% Living in Jewish Neighborhood <sup>2</sup>	% Considering Jew. Neighb. Important <sup>3</sup>	% Opposing Inter-marriage for Children <sup>4</sup>
<b>AGE</b>					
18-24	42.7	34.0	43.4	53.2	18.6
25-34	22.4	26.2	34.0	56.7	12.2
35-39	39.4	30.1	30.6	58.5	14.8
40-44	45.7	36.5	32.5	46.8	22.1
<b>EDUCATION</b>					
High School or Less	21.9	29.7	29.6	53.1	15.3
Some College	37.8	26.8	33.2	53.5	15.0
College Grad.	34.2	32.6	34.3	56.2	14.3
Grad. Training	38.8	34.9	38.5	52.3	18.5

<sup>1</sup> "Usually or Always"

<sup>2</sup> Neighborhood is "Very" or "Somewhat" Jewish

<sup>3</sup> "Somewhat" or "Very" Important

<sup>4</sup> "Strongly Opposing" or "Opposing"

For the 35 to 44 year olds, both of these groups to date had less than 1.5 children on average and have completed fertility expectations which are well below replacement. In this context, it is useful to reiterate that these two sub-groups together account for about 80 percent of all Jews between 25 and 44 years of age.

Given the close association between schooling and fertility, it is useful to clarify whether or not the reported differences by religious identification may be linked with possible religious difference in educational completion. As may be seen in Table 7, there is little systematic evidence of differences in education between the several religious groups. Note that due to small sample sizes, it is not possible to examine educational patterns for Orthodox at the different ages. For the overall 18 to 44 year old group, however, little variation may be noted between the Orthodox and the other groups in the percentage who have at least a college degree or the percent who have not gone beyond high school; about 65 percent of the overall Orthodox group have graduated from college compared with about 58 percent for all Jewish

Table 6. Marriage and Fertility, by Age and Religious Identification

	Percent Never Married	Percent Childless	Mean Children Ever Born	Mean Children Expected	Sample Size
<b>TOTAL 18-44</b>					
Orthodox	23.7	34.7	1.87	2.69	26
Conservative	37.8	55.7	0.86	1.93	173
Reform	23.9	44.1	0.99	1.87	238
All Other	34.3	47.0	1.16	1.95	89
<b>Ages 25-34</b>					
Orthodox	---	---	---	---	8
Conservative	30.5	64.0	0.65	2.28	65
Reform	28.7	57.8	0.67	1.84	94
All Other	32.7	42.7	1.31	2.29	39
<b>Ages 35-44</b>					
Orthodox	---	---	---	---	10
Conservative	19.9	28.3	1.45	1.55	84
Reform	8.4	20.9	1.47	1.77	121
All Other	10.1	32.3	1.46	1.78	37

women. At the other end of the educational spectrum, about 15 percent of the small Orthodox sample have not gone beyond high school, the same as for other Jews.

Both the Conservative and Reform women age 25 to 34 and 35 to 44 tend to be highly educated, with large majorities having graduated from college. The modest discrepancies between these groups in the various age categories tend to be erratic in nature and are more likely to represent sampling discrepancies than substantive reality.

Table 7. Years of Schooling Completion by Religious Identification: Female Respondents

Distribution	Years of Schooling Completed: Percent					Sample Size
	High School or Less	Some College	College Graduate	Graduate Training	Total	
Total 18-44	15.3	26.8	27.7	30.1	100.0	517
Orthodox	14.7	20.2	39.6	25.6	100.0	25
Conservative	16.6	29.9	23.3	30.3	100.0	167
Reform	8.9	30.0	29.5	31.6	100.0	237
All Other	29.0	15.3	28.6	27.2	100.0	88
Ages 18-24	23.6	46.4	26.5	3.5	100.0	67
Orthodox	---	---	---	---	---	7
Conservative	36.7	54.0	9.3	0.0	100.0	24
Reform	11.6	50.8	31.9	5.7	100.0	23
All Other	---	---	---	---	---	13
Ages 25-34	17.1	23.1	31.9	27.9	100.0	202
Orthodox	---	---	---	---	---	8
Conservative	17.4	24.9	28.0	29.8	100.0	61
Reform	8.4	27.0	34.3	30.4	100.0	94
All Other	35.7	11.1	33.6	19.6	100.0	39
Ages 35-44	10.8	23.6	24.2	41.3	100.0	248
Orthodox	---	---	---	---	---	10
Conservative	6.6	23.1	25.6	44.7	100.0	82
Reform	8.9	28.3	24.8	38.0	100.0	120
All Other	26.5	14.7	15.2	43.6	100.0	36

In summary, the close educational match between the Orthodox, Conservative and Reform women suggests that reported religious differentials in fertility are *not* educationally based.

### INDEPENDENT PREDICTORS OF JEWISH FERTILITY

We now shift to multivariate (ordinary least squares) regression techniques to address the question: do religious factors impact on fertility after taking into account other factors which can be associated with religion, religiosity and fertility? We examine the determinants of children ever born as well as expected fertility for women under 35, including a full set of secular and religious explanatory variables. Regarding expectations, we focus on results from an equation which includes a measure of children ever born as an explanatory variable. In this equation, the outcome measure is essentially measuring *additional* children expected. A parallel equation measuring additional children expected is also presented for women 35 to 44. The variables included in the equations and the OLS coefficients may be found in Table 8. As socioeconomic controls, we include measures of the respondent's family income and highest year of schooling completed.

With the religion variables we attempt to tap several dimensions. These dimensions include, for formal denominational self-identification, variables for Orthodox, Conservative, or Reform affiliation, comparing these with the reference group of Jewish non-affiliated women. In addition, we employ measures of frequency of synagogue attendance, Jewish/non-Jewish status at birth, and three scales constructed from items which were designed to reflect Jewish identification and synagogue membership, ritual practice, and other Jewish connections. The scales were created through factor analysis on a total of 13 items. Three factors exhibiting relatively high reliability could be distinguished, one reflecting "social" aspects of the religion or religious "networking", the other two reflecting ritual participation.

The first scale, the Social Scale, purports to measure the respondent's Jewish social networking. It incorporates: 1) the Jewish composition of the respondent's neighborhood; 2) the importance of the Jewish composition of the neighborhood to the respondent; 3) the number of the respondent's closest friends who are Jewish; and 4) the respondent's hypothetical reaction to her child's considering marriage to a non-Jewish person.

The second scale, the Ritual Scale, incorporates the several variables which define the extent to which the respondent engages in

Table 8. Determinants of Fertility for Jewish Women: Ordinary Least Squares Analysis

Explanatory Variables**	Younger Women (18-34)		Older Women (35-44)
	Children Ever Born	Expected* Additional Children	Expected Additional Children
<b>Secular Variables:</b>			
Family Income > \$60,000	0.41 <sup>a</sup>	0.40 <sup>b</sup>	0.02
Family Inc \$30-60,000	0.27	0.17	0.04
Graduate Schooling	-1.33 <sup>a</sup>	0.58 <sup>b</sup>	0.04
College Degree	-0.99 <sup>a</sup>	0.44 <sup>b</sup>	-0.02
Some College	-0.67 <sup>a</sup>	0.16	0.13
Age	0.12 <sup>a</sup>	-0.09 <sup>a</sup>	-0.04 <sup>b</sup>
Children Ever Born		0.56 <sup>a</sup>	0.78 <sup>a</sup>
<b>Religion Variables:</b>			
Orthodox	-0.79	0.97	-0.51
Conservative	-0.29	-0.24	
Reform	-0.09	0.07	-0.05
Attend Syn. at Least Monthly	0.10	0.36	0.36
Attend Syn. Less than Monthly	-0.23	0.22	0.20
Born Non-Jewish	0.32 <sup>b</sup>	-0.39 <sup>b</sup>	0.34 <sup>a</sup>
Social Scale	0.01	0.04	0.03
Ritual Scale	-0.01	0.00	0.05
Observance Scale	0.05 <sup>b</sup>	-0.03	-0.02
Constant	-1.96 <sup>a</sup>	3.59 <sup>a</sup>	2.02 <sup>a</sup>
(Adjusted)R <sup>2</sup>	.40 <sup>a</sup>	.27 <sup>a</sup>	.68 <sup>a</sup>
F	9.89	5.48	27.3
N			216

<sup>a</sup> p < .01 <sup>b</sup> p < .05

\* Equation has "total number of children expected" as the outcome variable, but includes "children ever born" as an independent variable. Thus, the results can be interpreted as effects on "expected additional children".

\*\* Omitted reference group for (1) income variable is family income under \$30,000; (2) schooling variable is 12 years of school or less; (3) religion variable is unaffiliated; and (4) synagogue attendance is "doesn't attend."

the more *intensive* Jewish rituals -- lighting candles on the Sabbath, refraining from handling money on the Sabbath, and following the Jewish dietary laws at home.

The third scale, the Observance Scale, synthesizes a number of variables measuring dimensions of formal holiday observance, including attending a Passover Seder, participating in Purim celebrations, and the lighting of Hanukkah candles. It also includes synagogue membership and, at the opposite end of the spectrum, having a Christmas tree in the household. It might also be termed the Holiday Scale.

Note that in this analysis we only have information on *current* levels of the independent variables which may vary over time (i.e., family income; synagogue attendance; participation in rituals), and these may not be as relevant for childbearing which occurred in the past. For this reason we limit the children ever born analysis to younger women for whom the various explanatory variables may be temporally in close proximity to the fertility events.

Table 8 suggests several secular *and* religious factors as predictors of variations in children ever born. Income and education effects are apparent; consistent with the tabular results, increasing education is strongly linked with lower fertility. In an economic context, the alternative value of time spent raising children (or the "opportunity cost"), becomes increasingly great as a women's education increases. Conversely, there is pronounced evidence that younger wealthier families have been motivated to have larger families.

Shifting from the secular to the religious, certain effects and, indeed, "non-effects" are of some importance. First, none of the religious identification variables are significantly associated with the number of children a woman has borne (this is true even when the three religiosity scales are omitted from the equations!). Additionally, synagogue attendance shows no association with cumulative fertility. It is, however, of some interest to note that younger women who were born non-Jewish (many of whom have married into the religion) are above average in their childbearing propensity.

Finally, and somewhat surprisingly, there is no apparent association between fertility and either the Social or the Ritual Scale. In contrast, the Observance (or Holiday) Scale shows a strong linkage with higher fertility. This association may reflect a "life cycle stage" artifact. It is well established that families are more likely to participate in synagogue activities, particularly those associated with the holidays, when they have children. They also may be more likely to observe holiday activities (such as Passover seders or lighting Hanuk-

kah candles) in the home if they have young children. If this is the case, the association between observance and fertility for families in the childbearing years would be multidirectional.

Some clarification of the nature of the religion-fertility linkage was found by examining the synagogue attendance coefficients in equations which omit the three indicators (table not presented). When the three scales are omitted from the equations, the synagogue attendance variable becomes strongly and positively associated with the number of children ever born.<sup>4</sup> All these results are consistent with the notion that fertility can drive religious involvement as much as (if not more than) religious involvement can impact on fertility.

We shift now to an examination of the determinants of *additional* children expected for women in the two age groups. For the younger women, income *and* education are associated *positively* with *additional* children expected, suggesting that higher income may play an important role not only as a predictor of current fertility, but also as a *motivator* of future higher fertility. In addition, better educated women with better employment prospects may be anticipating using prospective higher incomes to meet childcare or other costs associated with their absencing themselves from the home to at least partially make up for their delay in early childbearing.

Keeping in mind the aforementioned downward revision of fertility expectations of the cohort aged 35-44 in 1990, from what they stated in 1971, perhaps income aspirations for these younger women are overly optimistic, or tastes regarding what to use income for will change away from family-building as time goes by.

The religious identity variables also suggest some important linkages with fertility expectations for younger women. Both younger Orthodox and Conservative women anticipate an above average number of children in the years ahead. This finding for Conservative women is consistent with the tabular results presented in Table 6 which suggested higher prospective childbearing for Conservative women. Multivariate results, thus, indicate that a possibly important finding remains after controlling for class differentials.

Also, younger women who were born not Jewish have *below* average future fertility expectations (consistent with the evidence that they have already attained above average fertility) whereas their older counterparts have *above* average expectations. Whether this difference in expectations related with Jewish origin between the younger and older women reflects a secular transition associated with major changes in intermarriage patterns in recent years requires further investigation.

## CONCLUSION

In conclusion, there is certainly some ambiguity regarding whether or not the fertility of younger Jewish women is sufficient to insure population replacement. The only subgroups which so far have reproduced at an above-replacement level are the less educated, and the Orthodox who represent only small proportions of the Jewish population. Furthermore, while overall expectations for the younger women (as well as estimates for the younger Orthodox and Conservative) suggest fertility intentions at or above replacement, actual cumulative fertility to date for younger women has been very low, below the level for the overall U.S. population. For replacement to become a reality for these women (which requires about 2.1 children for each woman), their subsequent pace of childbearing will need to be quite rapid. For the older women, those aged 35 to 44, the likelihood is that replacement level fertility will not be attained. The 1971 NJPS survey data reveal that when this cohort was in the young childbearing stages, they expected numbers of children well above replacement level. Their actual fertility behavior by the end of their childbearing years does not come near to satisfying their original intentions. If this pattern applies to the younger women in 1990, they also will fall short of actually achieving above-replacement level expectations.

While socioeconomic factors are the main reason for differential Jewish fertility, there is indeed some evidence that religion also comes into play. Those more involved with their religion certainly have had higher fertility. Whether this factor truly represents a religious differential or a tendency for those with children present to participate more strongly in religious practices, requires further clarification.

As has been frequently demonstrated, temporal variations in fertility can be very sensitive to shorter term social and economic phenomena. Recent fertility patterns can be very sensitive to the nuances of contemporary circumstances and, for women in their early childbearing years (up to age 30 or so for this group of women), can have a great impact on cumulative fertility. Even more so, ongoing life circumstances can color fertility expectations. Thus, considerable caution must be exercised when interpreting these results from the perspective of future prospects.

## NOTES

\* This is a revised version of a paper presented at the 1992 Meeting of the Population Association of America, Denver Colorado.

<sup>1</sup> Parallel evidence related to marriage differentials is also available. Jewish women marry at later ages than their non-Jewish counterparts (U.S. Bureau of the Census, 1989). These religious differences are closely linked with education as better educated women marry later and, as described, Jewish women have more education. In a predictive sense, it is important to note that for the Jewish women, the determinants of marriage and fertility are very similar. This similarity is partly related to the fact that Jewish women report very little non-marital childbearing.

<sup>2</sup> This finding is certainly consistent with results presented by Mosher, et al. (1992) who have used data from the National Survey of Family Growth to suggest substantial differences between completed fertility and prior expectations.

<sup>3</sup> Given the extremely small sample sizes, statistics for 25-34 and 35-44 year old Orthodox women are not included in Table 6. However, they give the impression that for both of these age groups, the small number of Orthodox women were more likely to be married and to have a greater number of children than women in the other religious categories.

<sup>4</sup> While not included, this Synagogue-fertility relationship was particularly strong for women 35-44, where family involvement in religious activities is strongest.

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