NUPTIALITY AND FERTILITY OF ORIGIN GROUPS IN ISRAEL[1]

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THIS PAPER sets out to describe patterns of nuptiality and fertility in Israel. It starts with a description of these phenomena in the Jewish population as a whole, though evidently this is merely an average of the patterns in the very varied components of the population. It then goes on to deal in detail with individual origin groups, and finally reviews some data on trends in nuptiality and fertility which are connected with length of stay in the country.

We have attempted to describe separately the underlying patterns of demographic phenomena, and the observed rates in different periods. Rates are given to considerable fluctuations from year to year, but we assume that some underlying 'true' pattern exists, and we have tried to disentangle it from the fluctuations.

Data on Nuptiality

The present analysis of nuptiality is based mainly on the data of 1953, and also on the 1948 Census (Registration of the Population). A great boom of marriages occurred between these two dates—see Table 8—apparently caused by the influx of a surplus of unmarried immigrants, as well as by unusually high marriage rates. These effects had been largely reduced by 1953, when rates were apparently little above normal. No analyses have yet been undertaken for later years.

Marriage statistics were analysed in the form of nuptiality tables, estimated either (1) from age specific marriage rates for persons single, or (2) from rates specific for age only, or (3) from proportions single in the population at each age.

TABLE 1. *Percentage remaining Single—1953 data*

| | Age 50–59 | | Age 70–74 | |
	Male	Female	Male	Female
From proportions single in population	3·8	3·3	1·4	1·5
From age specific marriage rates for single persons	1·6	0·6	1·0	0·4

TABLE 2. *Proportions Marrying at each age (per 10,000 in Population at that age) by Sex, 1953*

| Age | Males | | Females | |
	From age specific rates for bachelors	From general age specific rates	From age specific rates for spinsters	From general age specific rates
−16	16	16	98	97
17	102	102	1,372	1,342
18	190	188	1,506	1,420
19	348	343	1,383	1,205
20	586	569	1,241	1,070
21	804	771	1,043	944
22	925	871	811	749
23	904	850	571	568
24	840	797	477	465
25	787	749	351	360
26	720	685	286	313
27	600	580	163	200
28	502	496	107	151
29	448	454	93	145
30	366	370	88	138
31	321	313	64	112
32	266	267	43	91
33	216	231	29	84
34	184	213	21	68
35–39	440	653	59	213
40–44	164	285	22	110
45–49	61	110	11	60
50–54	33	60	5	30
55–59	28	45	6	35
60–64	16	25	2	10
65–69	11	20	2	10
70–74	9	20	3	10

TABLE 3. *Mean Ages at first Marriage, by Sex—1953**

	Males	Females
From age specific rates for persons single	27·0	21·6
From general age specific rates	27·4	22·5
From proportions single in population	26·8	21·9

* Calculations do not take mortality into account—the effect of mortality is a reduction of less than six months in mean age at marriage.

Proportion ever Marrying

Marriage is almost universal in Israel. Among both sexes there are only 3–4 per cent remaining unmarried by ages 50–59, and even fewer at higher ages. Estimates based on 1953 marriage rates for persons single are lower still, presumably because of a slight excess in the rates of that year. Net probabilities of ever marrying, when we take into account also the chances of dying single, are about 0·91 for males, 0·94 for females. It seems that chances of remaining single are slightly greater for males than for females.

Proportions remaining single in Israel are among the lowest in the world, similar to what is found generally in underdeveloped regions. Much larger proportions unmarried obtain in almost all populations of European origin.

In many countries there are more women than men remaining single. There seem to be two types of countries where the opposite situation prevails: first, countries with almost universal marriage like the Arab countries, India, and some Balkan countries; second, English-speaking countries outside Europe, apparently because these are countries of immigration with a relative scarcity of women. Both these conditions obtain in Israel, and this may explain the slightly higher proportions remaining single among males than among females.

Ages at Marriage

The distribution of first marriages by age of brides and by age of bridegrooms are obtained from age specific marriage rates: (1) for persons single, or (2) for all persons. The two estimates differ slightly because of unusual proportions single in the population.

The age distribution of bridegrooms is positively skew. Little more than 1 per cent marry before age 18. The percentage marrying at each age then rises rapidly to about 9 per cent at ages 22–23. After those ages the percentages fall off again slowly; by 35–40 there are fewer than 1 per cent marrying at each age, and at high ages the frequency of first marriages is very low.

Brides have an even more skew age distribution, with a maximum frequency of 15 per cent marrying at age 18. After that age the frequency per age declines steeply to below 1 per cent around age 30. At high ages there are very few brides indeed.

The following partition values describe these distributions well. 10 per cent of males who marry, do so by age 20·6, 25 per cent by age 22·5, and 50 per cent by age 25·5. The corresponding ages for females are 17·6, 18·6, and about 20·5. The estimates for higher ages are less reliable but it would seem 75 per cent of marrying males are married by age 29–30 and 90 per cent by age 35 or thereabouts; 75 per cent of marrying females by 23–24 and 90 per cent by little over 26. The concentration of ages at marriage is shown by the fact that 50 per cent of bridegrooms

marry in a range of about 7 years of age, 50 per cent of brides in a range of about 5 years only.

Mean Age at Marriage[2]

Mean age at first marriage is estimated at 27–27·5 years for males and about 22 for females. Individual estimates vary slightly because the effects of the marriage boom had not quite passed by 1953.

In Israel, males marry on the average later than in most Eastern and Arab countries; later than in the United States and in other English-speaking countries, though only little later than in England and Wales; earlier than in countries of Northern, Western, and Southern Europe. Among East European and Latin American countries there are some where males marry earlier than in Israel and some where they marry later, so that no general comparison can be made.

Females in Israel marry on the average later than in Eastern and Arab countries; earlier than in all English-speaking countries except the United States—again the difference between Israel and England and Wales is small, though in the opposite direction to that found for males; earlier than in all European and most Latin American countries.

In comparison with Arab populations Israeli mean ages at marriage are late among females and not quite so late among males. In comparison with English-speaking and European countries generally, Israeli females marry early and males not so early. It would seem that for both sexes mean ages at marriage in Israel are between those in Arab countries and those in Europe. Also, the differences in ages at marriage between Europe and the Arab countries are smaller for males than for females; hence Israeli males are not found to marry much earlier than European males.

Percentages Single at Various Ages

Differences between countries in proportions single generally correspond to differences in mean ages at marriage, but the place of Israel among other countries is slightly different. At young ages (20–24, 25–29) proportions single are rather lower in Israel than in other countries with similar mean marriage ages. Among males, for instance, in Israel proportions single at those ages are similar or lower than in England and Wales, Australia and Canada—though mean age at marriage is higher. Israeli females show lower proportions single at those ages than females in the United States, though the latter marry earlier. These differences are much more pronounced at higher ages, at which proportions single are seen to be much lower in Israel than in other countries with similar mean ages at marriage.

These comparisons of proportions single bring out an important difference between nuptiality in Israel and in European countries with similar mean ages at marriage. In Israel there are more people marrying

already at early ages, but the high frequency of marriage is especially noticeable at higher ages. Relatively to other countries there is a special propensity to marry among those who are a little older; this tendency balances the high proportions marrying early and results in a not so low mean age at marriage.

TABLE 4. *Probabilities of Marrying within five years, for Single Persons of each Sex, by Age (computed from age specific marriage rates for persons single)*

Age	Israel, 1953		England and Wales, 1942-7	
	Males	Females	Males	Females
15	·066	·401	·046	·177
20	·425	·806	·375	·574
25	·601	·780	·555	·514
30	·638	·645	·423	·236
35	·525	·380	·302	·143
40	·398	·230	·208	·076
45	·242	·150	·123	·063
50	·168	·088	·039	·054
55	·176	·100	·034	·026
60	·121	·042	·033	·018

Probabilities, for single persons, of marrying within one year—for either sex—are relatively low at the earliest ages, then rise rapidly to a maximum—especially among females—and thereafter decline slowly to very low probabilities at high ages.

Probabilities that a bachelor marry within one year are highest—0·17—at ages 30–34; the maximum age cannot be located precisely. For bachelors at all ages between 20 and 40 the probability is not below 0·10. By age 50 the probability falls to 0·05, as it also does before age 20.

Probabilities of marrying within a year are higher yet for spinsters. For them the probability is highest at about age 24, reaching almost 0·25! For spinsters at all ages between 20 and 30 the probabilities are above 0·20, between 17 and 36 above 0·10, and after age 45 below 0·05. Again we see that females marry earlier and in a smaller age range than males. It is not correct, however, to consider an unmarried female at age 25 or 30 to be necessarily doomed to become an 'old maid', as there is still a very appreciable probability of marrying after these ages, and after higher ages as well.

It is interesting to compare the probabilities of marrying for single persons at each age, in Israel and in England and Wales, as the mean ages at marriage are similar in both cases. Probabilities are higher in Israel at all ages, but the excess is relatively greater at the higher ages. This confirms the impression gained from the study of proportions single. The great frequency of marriage is not concentrated in the lower age groups, as in most non-industrial societies (for females, at any rate),

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but is remarkable especially at advanced ages. Thus the Israeli population differs not only from European populations where fewer people marry, but also from those of Asia and Africa where frequencies of marriage are as high as those in Israel.

TABLE 5. *Probabilities of remarrying after having been Divorced (calculated for all persons born—estimates from 1953 age specific rates of remarriage as divorcees)*

	Males	Females
Gross Probabilities (not taking mortality into account)	·143	·135
Net Probabilities (taking mortality into account)	·124	·125

No reliable estimates of the probabilities of divorce have yet been computed for Israel. Our rough computations show that according to 1953 rates about one person out of every eight persons born is likely to remarry after having been divorced. The proportion getting divorced must be greater yet. Though these estimates cannot be considered very reliable there is no evidence that divorces are less frequent than suggested here.

TABLE 6. '*Total Fertility*', *by Birth Order, 1938–1954**

Year	All Births	Births of Order					
		1	2	3	4	5	6+
1938	2·48	1·11	0·55	0·29	0·16	0·10	0·26
1939	2·23	1·01	0·52	0·24	0·15	0·09	0·23
1940	2·35	1·09	0·57	0·23	0·14	0·09	0·24
1941	2·12	1·04	0·47	0·20	0·12	0·09	0·21
1942	2·38	1·19	0·58	0·24	0·12	0·08	0·18
1943	3·11	1·46	0·88	0·30	0·15	0·11	0·21
1944	3·27	1·24	1·15	0·40	0·17	0·10	0·21
1945	3·38	1·20	1·20	0·46	0·18	0·11	0·22
1946	3·39	1·21	1·10	0·46	0·19	0·12	0·21
1947	3·54	1·44	1·04	0·50	0·21	0·12	0·23
1948	3·08	1·33	0·89	0·42	0·16	0·09	0·18
1949	3·43	1·40	1·06	0·51	0·18	0·10	0·18
1950	3·90	1·28	1·24	0·63	0·27	0·16	0·32
1951	4·01	1·32	1·18	0·60	0·31	0·19	0·41
1952	3·98	1·21	1·19	0·60	0·32	0·20	0·47
1953	3·88	1·15	1·15	0·59	0·32	0·21	0·47
1954	3·59	0·99	1·05	0·58	0·31	0·21	0·45

* Total Fertility is estimated by adding the age specific birth rates for mothers of all ages. In years of high birth rates this may overestimate true fertility, and conversely in years of low birth rates. In Israel the estimates for first and second births are above the maximum possible—one per woman—for most of the years observed. This is presumably due to two causes: (1) births delayed before immigration and born later in Israel, (2) a 'baby-boom' during the years considered. A discussion of this phenomenon which is paralleled by an extraordinarily high marriage rate, is contained in a forthcoming paper, 'The Effect of Immigration on Marriage and Birth Rates in Israel'.

As the proportion of women bearing a first birth is so obviously over-estimated it is of course quite impossible to estimate the extent of childlessness from these data.

Fertility

Our analysis of the fertility of women in Israel is based principally on birth rates specific by age of mother and also classified by order of birth. The study of fertility by such rates involves the assumption that the rates of a particular period are mean rates of a typical cohort of women. We find great fluctuations in these rates, and apparently a tendency of immigrants to postpone births abroad and make up their numbers after immigration. Both these factors make the inference of fertility levels from birth rates exceedingly difficult. Calculations of 'total fertility' from birth rates have therefore to be used with caution, and we have tried to obtain corrected estimates of the mean number of children per woman, by taking averages over several years and eliminating obvious excesses of births of any particular order.

TABLE 7. *Fertility by Order of Birth—Adjusted Estimates*

	Mean no. of Births per Woman	Probabilities of having a Birth of Order					
		1	2	3	4	5	6+
Pre-mass-immigration (1938–47 mean)	2·57	max.	·81	·33	·16	·10	·22
Post-mass-immigration (1954)	3·40	max.	max.	·58	·31	·21	·45

It has been necessary to make separate estimates of fertility in Israel for the late Mandatory period and for recent years, since mass immigration, especially from Oriental countries, greatly changed average fertility. The above estimates for both periods (Table 7) are considered to be upper bounds for the true values which may be a little lower.

In both periods almost all women had first and second births, as also almost all women married within the reproductive period. Before mass-immigration there was a widespread tendency to have two children only, and only about a third of the women had more than two births. In the present-day population of Israel there is a greater propensity to have third births (almost 60 per cent of women) and even fourth births (about one third of the women). The effect of the immigration of Oriental women was almost entirely in increased numbers of higher orders of births, though immigration has not been the only cause of this increase. Evidently fertility differentials in Israel consist in some groups having two children only, while other groups have more—none have fewer.

Most births are born to mothers aged 20–35, with a maximum frequency at ages 20–24—on the average there is slightly more than one birth per woman within those five years of age. The mean age of mothers at birth is 27·5 years. Most first births are born to mothers aged 15–29, with a mean age of 23·6. Second to fifth births are born to mothers aged on the average 26·9, 28·3, 29·3, and 30·2 years, respectively.

TABLE 8. *Gross Nuptiality Rates, First Marriages,*
*1935-1954**

Year	Rate	Year	Rate
1935	1·18	1945	0·96
36	1·02	46	1·37
37	1·09	47	1·35
38	1·02	48	1·09
39	1·12	49	1·31
40	1·25	50	1·45
41	1·36	51	1·20
42	1·32	52	1·18
43	1·08	53	1·02
44	0·96	54	0·95

* These rates are calculated on the assumption that first
marriage to all marriage ratios were constant at the 1952-3
level during the whole period.

Fluctuations in Marriage and Birth Rates

There was a long and considerable decline in fertility up to the thirties;
no data on marriage are available for this period. The decline in fer-
tility corresponds to similar trends in other European populations in
that period. In Israel the decline was accentuated by changes in the
origin composition of the population, as the percentage of European
born women, who are less fertile, increased. There may also have been
a considerable reduction in the fertility of Oriental women in that
period, as their fertility in the late thirties was much below the level
of almost natural fertility which presumably prevailed amongst them
when they immigrated.

The lowest levels of marriage and birth rates were reached in the late
thirties, and there were even fears that fertility was below replacement
level. These were years of economic crisis in Israel and great internal
insecurity.

The Second World War brought great changes in marriage and birth
rates, as in many other countries. At the beginning of the war there were
a great number of marriages, partly postponed from the late thirties and
partly anticipated before the men joined up. In the later part of the war
there was a great reduction in the number of marriages as many young
men were serving abroad. Discharge of the soldiers increased marriage
rates again after the war, as did also the large percentages single among
illegal immigrants coming into the country after the war.

These changes in marriage rates were reflected a few years later by
similar changes in birth rates. First came peaks of first birth rates in
1943-4 and 1947, and somewhat later also of second and third and
higher order births. These fluctuations were especially marked among
second and third births and less so among first and fourth births. It is
interesting to note also that these fluctuations were most marked among

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women of western origin who tend to limit their families drastically, and much less among the more fertile Oriental women.

The War of Independence temporarily reduced marriage rates and birth rates of all orders. Presumably these reductions were made up soon after.

Mass immigration during the first years of independence produced a great change in the demographic pattern of Israel by increasing the percentage of Orientals in the population. We have not been able to establish changes in nuptiality, though there may have been a reduction in ages at marriage. There was, however, a great increase in fertility.

In addition to those fundamental changes there was also an unusual frequency of marriages and births in the early years of independence. The peak year of marriage rates was 1950, and for first births 1951. Since then rates have been falling off again.

There were special reasons for the high rates among new immigrants. There had been high percentages single and widowed among immigrants, and their marriages increased rates in Israel, first nuptiality rates and later also birth rates. There may also have been many births which had been postponed from before immigration. But changes in ages of mothers at birth suggest that births were not so much postponed as anticipated. And also among long-settled women those were years of high rates of apparently anticipated births. The conditions of living in reception camps might partly explain the high birth rates of new immigrants, as it has been found that immigrants have especially high rates in their first year in Israel. This, however, offers no explanation for the rise of the birth rates of long-settled women at the same time. It would seem that the continuation of an austerity régime with the limitation of the outlets for expenditure of personal income brought about an anticipation of births in the early fifties—and perhaps already in 1947 —which would otherwise have been postponed until later years.

After this abnormal frequency of births there had to be a decline. Changes in the economic outlook, the gradual relaxation of controls and wider opportunities for spending one's income, resulted in a renewed wish to postpone births or reduce their number. The excess numbers single among immigrants have also disappeared since, and marriage rates are returning to a more normal level. We consider the falling off of marriage and fertility rates in recent years to be a return to a normal long run level, and not a reduction below the true level of nuptiality and fertility of the Israeli population.

The final and long run level of marriages and birth rates cannot be established precisely yet. Possibly rates may be temporarily reduced even below their true long-run level when the births anticipated in the early fifties would have been born. It seems that nuptiality rates reached their true level about 1954, and birth rates might therefore be expected to reach it somewhat later. We believe there will be no further important

fall in marriage and birth rates after 1956, but that rates are now not much different from their true level in the Israeli population with the present origin composition.

Origin Differences in Nuptiality

The only data allowing comparisons of nuptiality patterns of different groups are the 1948 Census[3] tabulations by sex, age, and marital status, within groups by country of origin and period of immigration; and similar data for immigrants 1948–52. The probability of not marrying is estimated from the proportions single at ages 50–59, as few marry later, and the mean age at marriage was computed by known methods of using census data.[4] These calculations supplement estimates of median ages at marriage presented in an earlier paper,[5] in which intergroup differences were discussed in detail.

TABLE 9. *Proportions Single at Age 50–59—with 99 per cent Confidence Bounds —by Sex and Country of Birth (1948 Census)* *

Country of Birth	Males			Females		
Israel	·006	·018	·042	·009	·025	·053
Asia and Africa	·008	·018	·037	·002	·009	·026
Turkey	·004	·032	·116	·000	·000	·062
Iraq	·001	·018	·085	·000	·000	·083
Yemen and Aden	·002	·016	·059	·001	·012	·056
Syria and Lebanon	·000	·000	·108	·004	·038	·137
Other Asia	·002	·018	·067	·000	·000	·045
North West Africa	·000	·037	·275	·000	·000	·122
Other Africa	·000	·000	·221	·000	·000	·379
Europe and America	·032	·040	·049	·027	·035	·044
Russia and Baltic	·019	·031	·049	·020	·034	·056
Poland	·026	·036	·050	·016	·026	·040
Rumania	·012	·027	·052	·009	·025	·054
Bulgaria	·001	·024	·110	·000	·014	·100
Other Balkans	·005	·032	·100	·000	·000	·046
Germany and Austria	·047	·074	·112	·050	·077	·114
Czechoslovakia	·030	·079	·170	·015	·059	·154
Hungary	·016	·061	·158	·000	·000	·072
Other Europe, etc.	·003	·061	·281	·000	·028	·206

* Central figure is point estimate, outer figures are confidence bounds.

Probabilities of ever Marrying

Proportions remaining single are slightly higher for Europeans than for Orientals, yet do not seem to exceed 4 per cent by age 50–59. Small numbers of persons in these high age groups preclude our establishing any differences between individual Oriental countries of origin. Among European immigrants, however, those from Germany, Austria, and Czechoslovakia have significantly higher proportions not marrying— about 7 per cent.

The generally low proportions remaining single which obtain even among Israel born confirm' the accuracy of the population data as against that of 1953 rates which suggested still lower proportions (see Table 1).

No systematic or significant difference in proportions not marrying was found between immigrants of different periods of immigration, either among Orientals or among Europeans. The data are therefore not presented here.

Mean Ages at Marriage

The means in Tables 10 and 11 should be read in conjunction with the medians published earlier,[6] but in this case the pre-1929 data cannot be relied on, as this group included very few people in the earlier ages.

TABLE 10. *Mean Age at Marriage, by Continent of Birth and Period of Immigration (Estimates based on 1948 Census Data)**

Period of Immigration	Continent of Birth		
	All Continents	Asia and Africa	Europe and America
		MALES	
Total	27·65 ± ·08	27·24 ± ·24	27·62 ± ·10
Israel-born	28·02 ± ·27	—	—
pre-1929	(26·69 ± ·26)	(26·24 ± ·52)	(26·77 ± ·31)
1930–39	27·01 ± ·14	26·33 ± ·41	27·18 ± ·15
1940–47	28·16 ± ·22	28·25 ± ·53	28·17 ± ·24
1948	29·24 ± ·24	29·94 ± 1·25	29·17 ± ·25
		FEMALES	
Total	22·34 ± ·09	21·29 ± ·27	22·14 ± ·11
Israel-born	23·03 ± ·26	—	—
pre-1929	(22·30 ± ·26)	(21·61 ± ·47)	(22·69 ± ·31)
1930–39	21·81 ± ·16	21·45 ± ·46	22·08 ± ·17
1940–47	21·92 ± ·25	20·97 ± ·64	22·17 ± ·28
1948	23·09 ± ·29	22·68 ± 1·73	23·14 ± ·30

* (*a*) Bracketed figures cannot be considered reliable.
(*b*) Standard errors were computed by considering each estimate as a function of proportions single which were assumed distributed binomially.

1948 immigrants of both sexes are outstanding in their high mean ages at marriage. This is presumably due to large proportions single among these people who had immigrated only recently—and at a time of war. For the same reasons we should expect a reduction in excess proportions single as more years pass from the date of immigration. This may well account also for the apparent decrease in male age at marriage with length of stay in Israel. Had this been a real trend in marriage age we

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should have expected it to continue with Israel-born marrying youngest
—but it does not. Apart from 1948 immigrants, there is a trend of
female ages at marriage increasing with length of stay in Israel, and this
is continued by the higher ages among Israel-born. This trend is slight,
but interesting in its running counter to what would have been ex-
pected from the differences in proportions single at immigration.

The length of stay differences among both sexes were much the same
for Orientals and Europeans; hence differences between these two
groups do not seem to have changed with length of stay in Israel.

The most important differences in ages at marriage are between
origin groups. European bridegrooms are on the average about a year
older than Oriental bridegrooms, and brides about one and a half years
older. Earlier estimates[7] had suggested considerably greater origin dif-
ferences, but were based on most unreliable data and methods.

Israel-born bridegrooms are a little younger than European, but
brides are older than those of either immigrant group—this is due to the
trend of increasing female age at marriage with length of stay, as men-
tioned above.

Thus differences between the ages of the couple are slightly higher
among Orientals (over 6 years) than among Europeans (below $5\frac{1}{2}$
years) and least among Israel-born (below 5 years).

TABLE 11. *Mean Age at Marriage—Foreign-born by Country of
Birth (Estimates based on 1948 Census Data)*

Country of Birth	Males	Females
Asia and Africa		
Turkey	27·27 ± ·64	22·20 ± ·66
Iraq	28·57 ± ·66	22·30 ± ·75
Yemen and Aden	24·44 ± ·51	20·30 ± ·52
Syria and Lebanon	27·55 ± ·81	20·01 ± ·77
Other Asia	27·20 ± ·58	22·20 ± ·65
North West Africa	28·29 ± 1·11	19·25 ± 1·30
Other Africa	29·30 ± ·91	22·50 ± 1·37
Europe and America		
Russia and Baltic	27·79 ± ·28	22·35 ± ·32
Poland	28·13 ± ·15	22·21 ± ·18
Rumania	26·50 ± ·27	22·47 ± ·30
Bulgaria	27·66 ± ·60	22·73 ± ·66
Other Balkans	27·32 ± ·55	21·90 ± ·58
Germany and Austria	27·22 ± ·28	21·64 ± ·31
Czechoslovakia	27·24 ± ·51	21·18 ± ·61
Hungary	26·45 ± ·60	22·55 ± ·65
Other Europe and America	28·25 ± ·87	24·28 ± ·86

Even more considerable differences exist within these wide groups.
Among Orientals we find Yemenites marrying earliest, and Iraqi and
Turkish immigrants latest. Generally the earlier marrying come from

more backward countries, and the later marrying from countries where Jews were in some contact with modern industrial society. Among European immigrants age at marriage differences between individual countries are smaller, but generally mean ages rise as countries further North and West are considered; this roughly corresponds to the degree of industrialization of the countries.

TABLE 12. *Mean Age at Marriage—Immigrants by Country of Birth (Estimates from 1948–52 immigration statistics by sex, age and marital status, and from Unesco sample of New Immigrants, 1950–51)* *

Country of Birth	Immigrants 1948–52		New Immigrants' Sample	
	Males	Females	Males	Females
Turkey	26·5	24·2	26·9	23·0
Iraq	28·9	23·4	—	—
Yemen and Aden	22·8	20·0	23·2	15·7
North West Africa	26·9	21·3	24·5	18·1
Libya	25·0	22·0	—	—
Other Asia, Africa	—	—	26·7	19·7
Russia and Baltic	—	—	29·0	23·2
Poland	27·6	21·2	27·6	23·5
Rumania	27·6	24·4	28·2	23·8
Bulgaria	26·5	22·2	29·0	22·8
Other Balkans	—	—	30·1	24·0
Germany and Austria	—	—	31·3	24·6
Czechoslovakia	—	—	30·9	23·7
Hungary	—	—	30·4	23·3
Other Europe, etc.	—	—	28·8	23·1

* (a) For the New Immigrants' sample an ordinary mean of the ages at which the immigrants had married was computed.
(b) For the immigration statistics, mean age at marriage was obtained from proportions single at each age from 15 to 49. Since in some countries a number of girls marry before age 15, the method must have produced overestimates for them.
(c) The computations from immigration statistics are from Sicron (1957), Chapter 7.

The data from immigration statistics shed no further light on the small European differences. For Oriental immigrants, however, we find the inter-country differences to have been even greater at immigration. This suggests that inter-country differences have been reduced to some extent with length of stay in Israel, and confirms earlier findings about smaller inter-country differences among older than among newer immigrants.[8]

TABLE 13. *Total Fertility by Birth Order—Women born in Asia and Africa*

Year	Total	Order of Birth					
		1	2	3	4	5	6+
1938/40	4·55	0·87	0·77	0·68	0·56	0·44	1·24
1944/45	4·79	1·04	0·87	0·71	0·55	0·49	1·13
1949	4·45	1·11	0·87	0·73	0·46	0·38	0·90
1950	5·66						
1951	6·30	1·39	1·09	0·89	0·75	0·60	1·59
1952	6·23	1·23	1·14	0·86	0·73	0·59	1·68
1953	6·15	1·20	1·14	0·90	0·72	0·59	1·61
1954	5·67	1·02	1·04	0·91	0·66	0·55	1·48
Pre-1948 Immigrants							
1951	5·71	1·10	1·04	0·83	0·72	0·47	1·54
1952	5·35	0·92	1·06	0·79	0·60	0·44	1·54
1953	4·98	0·97	0·96	0·80	0·55	0·44	1·27
1954	4·22	0·90	0·76	0·69	0·47	0·34	1·07
New Immigrants							
1951	6·50	1·45	1·10	0·91	0·77	0·64	1·63
1952	6·45	1·28	1·15	0·88	0·76	0·64	1·74
1953	6·41	1·24	1·16	0·92	0·75	0·64	1·70
1954	5·96	1·04	1·08	0·94	0·71	0·60	1·60

TABLE 14. *Total Fertility by Birth Order—Women born in Europe and America*

Year	Total	Order of Birth					
		1	2	3	4	5	6+
1938/40	1·82	1·04	0·48	0·16	0·06	0·03	0·05
1944/45	2·91	1·26	1·17	0·33	0·08	0·03	0·04
1949	3·21	1·52	1·08	0·43	0·11	0·04	0·03
1950	3·29						
1951	3·17	1·36	1·18	0·43	0·13	0·04	0·03
1952	3·04	1·28	1·16	0·42	0·12	0·04	0·03
1953	2·87	1·20	1·10	0·38	0·12	0·04	0·03
1954	2·63	1·06	1·03	0·35	0·11	0·04	0·03
Pre-1948 Immigrants							
1951	3·50	1·36	1·32	0·56	0·17	0·05	0·04
1952	3·35	1·23	1·32	0·56	0·15	0·05	0·04
1953	3·09	1·12	1·22	0·51	0·16	0·05	0·04
1954	2·90	1·08	1·15	0·46	0·15	0·04	0·03
New Immigrants							
1951	2·85	1·34	1·06	0·30	0·09	0·03	0·03
1952	2·80	1·28	1·07	0·31	0·09	0·03	0·02
1953	2·70	1·22	1·03	0·29	0·09	0·04	0·03
1954	2·48	1·07	0·97	0·28	0·09	0·04	0·03

TABLE 15. *Total Fertility by Birth Order—Israel born Women* •

Year	Total	Order of Birth					
		1	2	3	4	5	6+
1938/40	3·49	0·89	0·70	0·50	0·41	0·28	0·70
1944/45	3·68	0·95	0·97	0·54	0·35	0·26	0·60
1949	3·56	1·12	0·92	0·56	0·27	0·22	0·48
1950	3·93						
1951	3·56	1·03	0·91	0·60	0·31	0·21	0·50
1952	3·36	0·96	0·95	0·57	0·27	0·19	0·42
1953	3·22	0·95	0·92	0·51	0·30	0·16	0·39
1954	2·89	0·84	0·85	0·50	0·26	0·12	0·33

Origin Differences in Fertility

Fertility differences between origin groups are relatively much greater than nuptiality differences. Oriental women bear about twice as many children as European women. Our estimates are based on the total fertility figures of Tables 13, 14, and 15, but as there were obvious surpluses of first and second births in recent years, we have subtracted these and reduced the total fertility of first and second births to 0·95 and 0·90 respectively—in view of sterility. We consider these adjusted estimates as upper bounds for true fertility.

TABLE 16. *Age Specific Fertility Rates, 1954, by Continent of Origin and Length of Stay*

Age of Mothers	Israel-born	Born in Asia and Africa		Born in Europe and America	
		Pre-1948 Immigrants	New Immigrants	Pre-1948 Immigrants	New Immigrants
15–19	22·1	105·7	120·8	53·9	50·2
20–24	159·6	209·9	336·7	187·5	156·0
25–29	177·1	213·2	282·8	166·3	137·1
30–34	132·9	169·7	238·8	113·3	95·0
35–39	64·7	103·6	136·2	47·7	45·7
40–44	19·1	32·7	60·5	9·9	9·8
45–49	2·8	9·6	16·8	0·8	1·3

European women are estimated to bear 2·5 children on the average to old immigrants, 2·3 to new immigrants. The corresponding means for Oriental women are 4–4·5 and about 5·5. Almost all women of both groups bear first and second births, and origin differences are mainly in higher order births. Less than half the European women have a third birth and as few as 4 per cent have a fifth birth; more than two-thirds of Oriental women have third births, and more than a third even have a fifth birth. Corresponding differences are found in age specific fertility rates: European women concentrate their births mainly in a short

period of ages and their rates are reduced particularly at the higher ages and the youngest ages as well.

Israel-born are a composite group by parental origin and thus tend to have demographic patterns intermediate between those of the two main origin groups. During late Mandatory times their fertility was about 3·5 births per woman on the average, now only about three. This reduction is presumably due to the increasing part of those of European parentage among them in recent years.

TABLE 17. *Indices of Fertility—by Country of Origin**

Country of Birth of Mother	1949 Birth Statistics		1952 Birth Statistics	
	Sf	Sa	Sf	Sa
Israel	3·96	2·96	3·28	2·94
Asia and Africa				
Turkey	3·16	2·75	3·47	3·27
Iraq	5·79	4·74	6·68	4·56
Yemen and Aden	8·73	6·37	9·45	7·34
Syria and Lebanon	7·36	4·96	—	—
Persia	—	—	7·11	5·01
North West Africa	5·92	4·57	8·23	5·77
Libya	6·04	4·33	6·64	5·21
Egypt	3·27	3·29	3·89	3·55
Europe and America				
Russia	3·12	3·20	3·31	3·10
Baltic countries	1·88	1·84	2·51	2·43
Poland	2·03	2·07	2·68	2·62
Rumania	1·72	1·84	1·86	2·05
Bulgaria	2·30	2·32	2·39	2·45
Yugoslavia and Albania	2·35	2·21	2·26	2·37
Greece	3·15	3·13	3·13	2·92
Germany	2·02	2·05	} 2·30	} 2·30
Austria	2·01	2·05		
Czechoslovakia	1·86	1·98	2·18	2·32
Hungary	1·99	2·08	2·48	2·54
Other Europe and America	2·04	2·07	1·98	2·14

* The indices were computed from age specific ratios of all births to first births by methods suggested by Hajnal (1948). These indices can be shown to be much affected by short-term fluctuations and this greatly reduces their reliability. A detailed discussion of these indices will be found in Gabriel and Falk (1958).

Further differences exist between immigrants of individual countries of origin within each broad group (Orientals, Europeans). No figures on the population by age and individual country of origin are available, so only very rough estimates of fertility could be computed (Tables 17 and 18). Considerable fertility differences are observed between women of different Oriental countries. Yemenite women seem most fertile— with at least six or seven children—followed by North-West African women. Other immigrants with high fertility are from Persia, Syria and Lebanon, and Libya. Women from Iraq have fewer children. Two

Oriental groups with appreciably lower fertility are women from Turkey and Egypt—only 3–3·5 children on the average.

TABLE 18. *Mean Birth Order, by Country of Birth of Parents (Sample of Confinements 1955–56, in town hospitals)* *

Country of Birth	Duration of Marriage (years)	
	3–5	6–10
Turkey	2·05 ± ·10	3·05 ± ·17
Iraq	2·34 ± ·08	3·76 ± ·14
Yemen	2·60 ± ·17	3·76 ± ·11
Syria	2·33 ± ·14	3·95 ± ·24
Persia	2·52 ± ·17	4·00 ± ·30
Morocco	2·31 ± ·13	4·11 ± ·13
Tunisia	2·63 ± ·24	4·70 ± ·42
Libya	2·58 ± ·20	3·73 ± ·37
Egypt	2·26 ± ·13	3·35 ± ·30
Poland	1·86 ± ·06	2·20 ± ·06
Rumania	1·56 ± ·08	2·23 ± ·12
Bulgaria	1·61 ± ·10	2·04 ± ·15
Greece	1·87 ± ·02	2·36 ± ·21
Germany	1·67 ± ·18	2·23 ± ·22
Czechoslovakia	1·50 ± ·20	2·20 ± ·25
Hungary	1·67 ± ·22	2·82 ± ·37

* I am indebted to Dr. Goldschmidt of the Hebrew University Department of Zoology for providing the data, and to Mrs. Ronen for analysing them.

All groups of European women have fewer children than any Oriental group, and the differences between themselves are not so great. Women from Russia bear the most children, then women from Poland, Hungary, and the Baltic countries. Women from Central, North, and South Europe have relatively few children. In the Balkans, Rumanian women had as low fertility as any other European group, whereas women from other Balkan countries were almost the most fertile from Europe. This order is generally in agreement with that found in earlier studies,[9] and apparently also among the Jews in their country of origin. It is important to note that the order by fertility is much the same as the order by age at marriage noted above.

The demographic order of countries of origin generally corresponds to what is known about the demographic patterns among Jews in each of these countries. In Oriental countries demographic patterns depend mainly on the backwardness of the countries or their contact with industrialized society; thus Yemen is at one end of the scale and Turkey at the other. Another factor is introduced wherever the Jews are radically different from the main body of the population, as for instance in Iraq where they were concentrated mainly in the large towns and in contact with the semi-English administration, or in Egypt, where the Jews were

an economic elite and their origin was often European rather than Egyptian. It is not clear why the contact of North African Jews with the French administration does not seem to have influenced their demographic patterns at all.

The demographic order of countries of origin of European immigrants generally corresponds to the level of industrialization of the different countries, which roughly varies from South-East to North-West Europe. This development affected Jews also through their emancipation from orthodoxy, which had imposed traditional ways of life on them, including also habits of early marriage and high fertility. As against orthodox Jewry from parts of Poland and Russia we may contrast the liberal Jews of Central and Western Europe whose fertility was exceedingly low and amongst whom there was an appreciable percentage who never married. Here, too, the demographic order of origin groups in Israel corresponds to that among the Jews in the Dispersion and at immigration.

TABLE 19. *Indices of Fertility by Origin of Mother and Occupation of Father (1949)* *

Birthplace of Mother	Total		Israel		Asia and Africa		Europe and America	
Occupation of Father	Sf	Sa	Sf	Sa	Sf	Sa	Sf	Sa
Total	2·44	2·44	3·22	2·83	5·97	4·37	2·06	2·10
Professional	1·97	2·05	2·45	2·36	—	—	1·81	1·89
Administration and clerical	2·04	2·11	2·52	2·46	2·83	2·85	1·85	1·92
Trade and Sales	2·96	2·88	—	—	—	—	2·25	2·22
Manual Labour	2·57	2·56	4·20	3·24	6·45	4·67	2·12	2·15
Farming	3·23	2·50	2·72	2·57	5·75	4·40	2·84	2·23
Services, etc.	2·30	2·37	2·54	2·51	4·83	3·94	1·92	2·02

* See note to Table 17.

Again, very few and unreliable data are available on occupational differences in fertility. The only estimates are based on birth statistics, but have been broken down into broad origin groups first, so that occupational differences can be studied separately from origin differences. Wives of clerical and professional men have the lowest fertility, whilst manual workers and tradesmen (all sales and commerce) have relatively many children. The position of agriculture has varied in different periods. Occupational differences are larger among Orientals than among Europeans, perhaps because the reduction of Oriental fertility has begun at first in the 'upper strata' which are in closer contact with Europeans and tend to emulate them. Occupational differences may affect origin differences when changes in the occupational

structure of immigrants occur. Increasing numbers of Orientals in 'upper strata' occupations may effect a reduction in their fertility. We do not believe this to be the main process of demographic change in Israel; it seems to us that most changes occur within origin and occupational groups, but we have no data to test this assumption on.

The Effect of Length of Stay in Israel on Nuptiality and Fertility

The effect of length of stay in Israel on nuptiality and fertility is of the utmost importance for the demography of Israel. An evaluation of the future development of Israel's population must take into account not only the differences between origin groups, but also the expected trends of the development of these differences.

We have unfortunately been able to make only very few direct comparisons of the same immigrant group at different periods of their life in Israel. Most comparisons are of data of a particular period, comparing newer and old-established immigrants. These comparisons may reflect other factors as well as differences in length of stay. The most important disturbing factor would be origin differences, and therefore all comparisons have been made only within the two broad origin groups. But within each of these groups there might have been differences in the representation of individual countries which could have affected nuptiality and fertility. Comparison of new immigrants and old settlers separately for each country of origin could be made only for some of the data on marriage. Strictly speaking, for all other comparisons we have to assume the country composition of new and old immigrants from either broad origin group to have been the same, and also that there were no other demographically relevant differences between the immigrants in the two periods. Neither of these assumptions is strictly true for our comparisons of old immigrants (immigrated before 1948) and new immigrants (immigrated since 1948).

Firstly, it is clear that some origin differences did exist between old and new immigrants. We know that European immigration in the thirties came mainly from Germany, Poland, and Central Europe, whereas in the first years of independence the main countries of origin were Rumania and Bulgaria. Among Orientals before 1948 there were few of North African origin, whereas in later years immigration from those countries was very considerable. Fertility differences may of course have been affected by these origin differences. Unfortunately we have no sufficiently detailed data to enable us to take account of the expected influence on fertility of these changes in origin composition.

Secondly, persons who immigrated during Mandatory times and those who immigrated during the period of independence may have differed in each country of origin, and these differences may have affected demographic patterns as well. One would not expect such differences to have been important among different waves of Oriental immigrants as their

fertility has not been limited to any important extent. But European immigrants before the Second World War were a select group in their national outlook and readiness for the drastic change of mode of life involved in immigration. It may well be that this group would have been especially affected by the extreme limitation of natality in Europe in those years. On the other hand new immigrants from Europe spent the war years under Nazi rule, and this is bound to have affected their fertility. Many births must have been postponed during the war and possibly made up later or after arrival in Israel. In some cases people may have been affected so as not to be able to raise a family any more, in others they may have had extra births to make up for children lost in the persecutions and the war. We have very little precise information about the extent of these influences on Jewish demography and we are therefore not able to evaluate the effects of selection of immigrants and of the war and persecution on the differences between earlier and later immigrants.

We are forced back on the assumption that demographic differences between old and new immigrants are differences in length of stay only. The factors that we have considered may have influenced these comparisons but we are unable to say by how much. We shall have to be cautious in using our comparisons, and try to supplement them as far as possible by comparisons of old immigrants with the entire population before independence. These last would be the only comparisons where factors of selective migration and changes in origin composition cannot operate.

No trend in probabilities of marriage can be related to duration of stay in Israel. Nor is there any evident change in male ages at marriage. It seems, however, that female ages at marriage rise with length of stay: women of the older immigration marry later than new immigrants, and native born even later. No lessening of age at marriage differences between Orientals and Europeans can be discerned, but within each group there seems to be a reduction in differences between individual countries of origin. This phenomenon has been observed for both sexes and different sources of data seem to confirm it. It appears then that there is a trend to unify the ages at marriage of immigrants from both main origin groups. Among Orientals as among Europeans, groups with relatively high ages at marriage tend to reduce them with duration of stay, and early marrying groups tend to raise their ages at marriage.

Data bearing on the effect of length of stay on fertility include primarily the total fertility estimates for new and old immigrants and Israel-born—Tables 13, 14, and 15—and the comparison of total fertility of old immigrants 1951–4 with the whole population of the same origin before mass immigration, i.e. 1938–40 and 1944–5, in the same tables. Other data are analyses of 1951 and 1952 birth statistics which also show the differences between Israel-born women of various parental

TABLE 20. *Indices of Fertility, by Origin of Mother and Period of Immigration*

	1951 Birth Statistics		1952 Birth Statistics	
	Sf	Sa	Sf	Sa
Born in Europe and America				
Immigrated before 1948	2·67 ± ·06	2·51 ± ·04	2·69 ± ·05	2·62 ± ·03
Immigrated since 1948	1·98 ± ·02	2·16 ± ·02	1·98 ± ·08	2·16 ± ·02
Born in Asia and Africa				
Immigrated before 1948	6·21 ± ·41	4·85 ± ·17	7·23 ± ·17	5·45 ± ·10
Immigrated since 1948	5·38 ± ·21	4·21 ± ·05	5·74 ± ·14	4·78 ± ·06
Born in Israel of Fathers				
Born in Europe and America	2·43 ± ·12	2·35 ± ·06	2·61 ± ·12	2·50 ± ·06
Born in Asia and Africa	5·02 ± ·59	3·95 ± ·18	4·05 ± ·21	3·79 ± ·14
Born in Israel and not known	3·26 ± ·16	2·95 ± ·07	3·48 ± ·19	3·04 ± ·07

* See note to Table 17. Standard errors were calculated by considering the indices as functions of the percentages of first births among all births, and assuming these percentages to be binomially distributed.

TABLE 21. *Mean Birth Order, by Community and Birthplace of Mother (Confinements in Hadassah Hospital, Jerusalem, 1932–33)* *

Community	Immigrants	Israel-born
Ashkenazi (mostly of European origin)	2·1	2·75
Oriental (mostly of Oriental origin)	4·3	3·5

* I am indebted to Mr. H. S. Halevi for allowing me to reproduce these data.

TABLE 22. *Mean Birth Order, by Continent of Birth and Birthplaces of the Parents (Sample of Confinements, 1955–56, in town Hospitals)* *

Origin of Both Parents		Europe and America		Asia and Africa	
Father born:	Mother born:	Duration of Marriage (years)		Duration of Marriage (years)	
		3–5	6–10	3–5	6–10
abroad	abroad	1·71 ± ·04	2·23 ± ·04	2·38 ± ·08	3·87 ± ·05
abroad	in Israel	1·83 ± ·09	2·38 ± ·11	2·24 ± ·18	3·60 ± ·07
in Israel	abroad	1·50 ± ·10	2·52 ± ·18	2·15 ± ·15	3·71 ± ·28
in Israel	in Israel	1·86 ± ·11	2·76 ± ·13	2·10 ± ·10	2·85 ± ·20

* *Source:* See Table 18.

origins, and relate these to the figures for old and new immigrants—Table 20. Further fragmentary data are analyses of hospital statistics in 1932–3 and 1955–6 in which the Israel-born mothers are classified by community or parental origin—Tables 21 and 22. Estimates in these last three tables cannot be considered reliable because of shortcomings in data and methods, but they are valuable in providing confirmation of the trends apparent in the scant data available.

Women of the older immigration from Oriental countries have much lower fertility than new immigrant women from those countries. Native-born women of Oriental origin have even lower fertility, so that there is a clear trend of reducing Oriental fertility with duration of stay. It is not quite clear to what extent the whole reduction of fertility has occurred in Israel, as it seems that even new immigrant women from the East have fewer children than one would expect if they did not limit their fertility at all. It may be that Oriental women used to restrict their families to some extent even in their countries of origin.

Among women of European origin length of stay is correlated with a slight rise in fertility, mainly in a larger number of three and four child families. This trend is also evident in the further rise of the fertility level of native-born women of European parentage.

The reduction of Oriental fertility is not unexpected. When a group of people from a backward and traditional society comes into contact with an industrial and generally agnostic environment, it is to be expected that the group will to some extent assimilate the mores of the more modern population. So that Oriental immigrants who had very high fertility, adopted European methods of family limitation to some extent. The final development of this trend cannot be foreseen yet, nor can it be said whether future generations of Oriental origin will reduce their fertility by as much as Europeans.

The increase of the fertility of Europeans is more surprising. One cannot suppose this group to have partly assimilated the more fertile habits of their Oriental neighbours. Orientals were a small minority before independence, and anyway one would not expect a modern free-thinking population to adapt itself to a more backward community, least of all in such vital matters as the size of family. There is not generally known to be an important degree of adoption of Oriental mores by European immigrants.

Another possible factor is the change in the occupational structure of European immigrants in Israel. It might be thought that the adoption of 'lower' occupations would result in a corresponding rise in fertility. This explanation may be relevant to the comparison of fertility in European Jews in Israel and in the Dispersion. It does not seem to be relevant to the comparisons of old and new immigrants, as it is highly unlikely that differences of occupational structure between new and old immigrants and native born of European origin really are in the

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direction of lower social strata among the latter. Perhaps the explanation is that changes in occupations are only felt gradually.

We tend to believe that the increase of the fertility of Europeans can be understood only in terms of the change of outlook of Jews in Israel and the Dispersion. The important factors are not so much occupational or status changes, as changes in the attitude towards the community, personal security, and the outlook for the future. It may also be that possibilities of economic and social advancement are more limited in Israel, so that large families are not so important a handicap.

The reduction of origin differences in fertility from new to old immigrants, and even more to the first Israel-born generation, is not, then, merely a trend of assimilation. There are a number of different factors at work. True, the decline of Oriental fertility is largely a movement of assimilation of European patterns, but it is not at all clear how far this trend will continue, and what the ultimate level of fertility of the descendants of Orientals will be. The slight increase of European fertility with duration of stay is less well explained. It would seem to signify the abandonment of Jewish attitudes of extreme family limitation in the European Dispersion, and the adoption of an outlook more suited to a people in their own country. It would be very important to consider this last problem from a sociological point of view, and thereby also to see to what extent this trend may continue or has perhaps already been completed.

It is too early to estimate the future development of patterns of nuptiality and fertility in Israel. We know too little about changes in nuptiality even to guess at future trends. We may assume the fertility of Orientals and their descendants to continue declining and that of Europeans perhaps to rise slightly. We cannot foresee whether these trends will result in a common level of fertility for both groups or whether this will come about only in the long run through inter-marriage between the origin groups. Origin differences in fertility continue in the first native-born generation also in other countries of immigration. Changes of fertility of origin groups are affected mainly by two factors: the occupational groups to which the immigrants and their descendants tend, and the extent of intermarriage with the natives. Both these factors are likely to slow down the trend of reduction of origin differences in Israel. There seems to be considerable economic origin differentiation even among the native-born generations, and the extent of intermarriage between Orientals and Europeans is not great.

The development of fertility in Israel in the near future depends on two conflicting trends: the reduction of Oriental fertility which is greater than the rise of that of Europeans, and the increasing share of the more fertile Orientals in the population. We cannot foresee which of these factors will predominate, and whether an upward or downward trend of fertility will ensue.

NOTES

[1] This paper is a summary of some of the results of a Ph.D. thesis on 'Nuptiality and Fertility in Israel—with special reference to differences between origin groups and their assimilation', at the Hebrew University in Jerusalem under the supervision of Professor R. Bachi. This research was supported, in part, by the Ford Foundation grant for demographic research. For details on methods and sources the reader is referred to the above study. Unless otherwise stated, data are based on government statistics and special supplementary estimates. A version of this paper was read at the Second World Congress of Jewish Studies, Jerusalem, 1957, in the Section 'Demography of the Jews'.

[2] Comparisons with other countries are based on similar data collated by the United Nations. U.N. (1949-50, 1955).

[3] These tabulations were carried out on a special 20 per cent sample of the registration cards, with the support of the Ford Foundation grant.

[4] See Gabriel (1953), p. 277, or Hajnal (1953).

[5] Gabriel (1956).

[6] Gabriel (1956), Table 1.

[7] Bachi (1952), p. 434; Gabriel (1953), pp. 279-82.

[8] Gabriel (1956), pp. 255-7.

[9] Gabriel (1953), p. 291, quoting data published by Bachi (1944), Table 89.

REFERENCES

BACHI, R. (1944) *Nuptiality and Fertility in the various Sections of the Jewish Population of Palestine*, Jerusalem, The Jewish Agency.

—— (1952) 'La population juive de l'état d'Israël', *Population*, Vol. III, no. 3.

GABRIEL, K. R. (1953) 'The fertility of the Jews in Palestine', *Population Studies*, Vol. VI, no. 3.

—— (1956) 'Some new data on age at marriage in Israel', in *Scripta Hierosolymitana*, Ed. Bachi, Jerusalem, Hebrew University.

GABRIEL, K. R., and FALK, RUMA (1958) 'Fertility Estimates from Birth Statistics', *Proceedings of the Meetings of the Social Statistics Section of the American Statistical Association, December 1958.*

HAJNAL, J. (1948) 'The estimation of total family size . . .' *Population Studies*, Vol. II, no. 3.

—— (1953) 'Age at marriage and proportions marrying', *Population Studies*, Vol. VII, no. 2.

SICRON, M. (1957) *Immigration since the establishment of the State*, Jerusalem, Falk Project.

U.N. Demographic Yearbooks (1949-50, 1955).