SOCIAL AND PSYCHOLOGICAL FACTORS AFFECTING FERTILITY

III. THE COMPLETENESS AND ACCURACY OF THE HOUSEHOLD SURVEY OF INDIANAPOLIS[1]

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HOW accurate are data collected in the studies carried on by various agencies whose enumerators make a house-to-house survey, have a relatively simple schedule to fill out, and cannot spend much time to establish *rapport* with each informant? Are the errors numerous or few, small or large? Do they tend to be compensating, or do overstatements predominate for certain questions and understatements for others? Are these matters related to the socio-economic status of the respondents, and if so in what way? Questions like these arise frequently in the minds of users of data gathered in such a manner. Usually the limitations of the study make it impractical to test the data in the field, even on a sample basis.[2] Occasionally, however, the house-to-house survey is carried on primarily to locate cases for a subsequent intensive study, in which case it is a simple matter to determine the accuracy of the

[1] This is the third of a series of reports on a study conducted by the Committee on Social and Psychological Factors Affecting Fertility, sponsored by the Milbank Memorial Fund with grants from the Carnegie Corporation of New York. The Committee consists of Lowell J. Reed, Chairman; Daniel Katz; E. Lowell Kelly; Clyde V. Kiser; Frank Lorimer; Frank W. Notestein; Frederick Osborn; S. A. Switzer; Warren S. Thompson; and P. K. Whelpton.

A summary of part of the material considered in this paper was contained in Whelpton, P. K. and Kiser, Clyde V.: Social and Psychological Factors Affecting Fertility. I. Differential Fertility Among 41,498 Native-White Couples in Indianapolis. The Milbank Memorial Fund *Quarterly*, July, 1943, xxi, No. 3, pp. 273-278 (Reprint pp. 53-58). Certain slight differences in the data presented in the two articles are due to the correction of errors discovered during the interim.

[2] A study by Lienau includes a section relating certain characteristics of enumerators (including scoring ability on psychological tests) to accuracy of data collected in the National Health Survey. No revisits were made for this study, however, and the author's criteria of accuracy were few and based upon questionable assumptions. Nevertheless, the results are suggestive. *See* Lienau, C. C.: Selection, Training and Performance of the National Health Survey Field Staff. *The American Journal of Hygiene*, November, 1941, xxxiv, No. 3, Sec. A., pp. 110-132.

first group of schedules. The results of such a test are presented in this report.

The Household Survey of Indianapolis, conducted during the summer of 1941, was a preliminary step in a Study of Social and Psychological Factors Affecting Fertility.[3] In the Survey an attempt was made to fill out a short schedule for virtually every dwelling unit occupied by white persons. If a native-white couple was living in the dwelling unit and the wife was under 45 years of age, the following questions were asked as of the time of the interview:

A. Couple
   (1) Year of marriage
   (2) Tenure of dwelling unit
   (3) Rent paid for dwelling unit or monthly rental value if owned
   (4) Whether lived all the time since marriage in a city of 25,000 or more and if not, how many years
B. Wife and Husband
   (1) Age at last birthday
   (2) State of birth
   (3) Whether married previously
   (4) Highest grade of school completed
   (5) Religious preference (Protestant, Catholic, Jewish, other, or none)
C. Wife
   (1) Number of live births
   (2) Number of children living

In addition, the canvasser listed the informant (wife, husband, child, neighbor, etc.).

Completeness of coverage, and the accuracy of the data gathered in such a survey, probably are influenced considerably by the sponsorship, by the type of canvasser, and by the conditions under which the canvassers work. The Household Survey was sponsored by the Indianapolis Council of Social Agencies, a fact that was mentioned

[3] The Household Survey of Indianapolis usually will be referred to hereafter as the Survey, and the Study of Social and Psychological Factors Affecting Fertility, as the Study.

in publicity material and by the canvassers in introducing themselves, and that is believed to have helped substantially in securing cooperation.[4] Most of the canvassers were recent college graduates with a real interest in scientific study; all were highly recommended by competent persons. They were given careful training and supervision by Miss Emily Marks, who was in immediate charge of the Survey. They were paid by the hour (65c) so that they would not feel under pressure to hurry unduly, omit questions, and skip less accessible dwellings. Finally, they were told that certain of the households would be revisited later by the more experienced interviewers of the Study, and that their schedules for these households would be verified. For these reasons, particularly the latter, this Survey may compare favorably with others of a similar nature with respect to completeness of coverage and the accuracy of the information obtained.

Completeness of Coverage

Completeness of coverage can best be tested by comparing the number of dwelling units according to the Survey with the corresponding figure from the 1940 Federal Census of Housing. The definition of "dwelling unit" used in the Survey was based on that used in the Census, the primary criterion for determining whether living quarters constituted a dwelling unit being the presence of cooking facilities.[5]

As of April 1, 1940, the Census reported 97,749 dwelling units occupied by white persons, and 4,367 vacant dwelling units. The Survey was conducted from March 1 to August 31, 1941, most of the work being done between June 10 and August 20. Schedules

[4] The Committee conducting the Study wishes to express again its appreciation for this cooperation, and also its thanks to the Council and the Extension Center of Indiana University for providing office space.

[5] For the Census definition, *see* Sixteenth Decennial Census of the United States. "Instructions to Enumerators." Housing, 1940, p. 2, and "Instructions to Enumerators." Population and Agriculture, 1940, p. 37.

For the Survey definition, *see* Whelpton and Kiser, *op. cit.*, p. 273 (Reprint p. 53).

were filled out for 102,838 dwelling units occupied by white persons, and 2,601 vacant units available for white persons. Before these figures are compared with those of the Census, however, adjustments should be made for three reasons. First, since the primary purpose of the Survey was to locate white couples meeting the requirements set up for the subsequent detailed Study, the complete coverage of areas with nonwhite inhabitants was not attempted. Blocks listed by the 1939 Real Property Inventory as having colored persons living in 91 per cent or more of the occupied dwelling units were not assigned to canvassers, for it was believed that few white couples would be found in them. Second, after part of the business district was canvassed, it was decided in the interest of economy that the canvassers should not cover the remaining blocks in the district that were listed in the 1939 Real Property Inventory as having no dwelling units. Third, the canvassers were refused information regarding the number of dwelling units in five apartment hotels and (unlike the Census enumerators) could not compel cooperation. Obviously, the 501 blocks belonging in these three categories should be excluded from the comparison.

In the 4,219 blocks presumably covered by both the Census and the Survey, the Census counted 96,842 dwelling units occupied by white persons and 4,102 vacant dwelling units, and the Survey 102,432 and 2,589, respectively. The Survey total for the two groups is 105,021, which is 4,077 or 4.0 per cent above the Census total of 100,944. Most of this excess appears to be due to the population growth that occurred during the fourteen to seventeen months between the two undertakings, for on May 1, 1942, twenty-five months after the Census and approximately ten months after the Survey, the estimated population of Marion County, Indiana (in which Indianapolis is located), based on the registration for War Ration Book One, was 7.1 per cent larger than the Census count.[6]

[6] In comparing rates of increase for population and dwelling units, it should be remem-

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In order to test more precisely the completeness of coverage of the Survey a field check was made of 191 blocks containing no colored residents and having the more important differences between the Census and Survey counts of dwelling units.[7] As would be expected, the check shows that in some of the blocks both the Census and the Survey figures are correct for their respective dates, the difference between them being due to the building or demolition of houses during the interim. The former occurred in 17 blocks near the outer edge of the City, in which the Survey counted 373 dwelling units and the Census 132. The latter occurred in one block where 16 dwelling units were torn down to make way for a factory.

Among the remaining 173 blocks the field check shows there are 157 for which the Survey count appears correct, 15 for which it is certainly incorrect, and 1 for which its accuracy cannot be determined.[8] The Survey errors in 3 of the 15 blocks were made by assigning some of the dwelling units to the wrong block, and probably were caused in part, at least, by incorrect street names on the map.[9] In another block a similar mistake occurred and in addition 3

bered that a reduction of vacancies permits population to increase more rapidly than dwelling units, and that under conditions like those in question there would be a tendency for families to "undouble" because of the improvement in economic conditions. The latter would be offset, however, by an unusually high proportion among migrants of husbands without their families (because of a belief before Pearl Harbor that the boom due to the European war would be temporary), and later would be reversed by a scarcity of vacant dwelling units.

[7] The 191 blocks include the following: (a) all (62) blocks for which the Census count of dwelling units exceeds that of the Survey by 10 or more; (b) 118 of the 146 blocks in which the Survey count exceeds that of the Census by 10 or more dwelling units; and (c) 11 blocks in which the difference is smaller, but believed related to the differences in the foregoing blocks. The remaining 28 blocks referred to in "(b)" were included in the original plan but were omitted on the last day of the field work because of the findings in the other blocks.

Blocks with nonwhite inhabitants were omitted from the field check because the Survey canvassers were not instructed to fill out a schedule for every dwelling unit occupied by colored persons, nor for every vacant unit apparently available for colored rather than for white persons.

[8] For this block, occupied entirely by the State Fair Grounds (now used by the Army), the Census shows 17 and the Survey 4 dwelling units.

[9] The maps used by both the Census enumerators and the Survey canvassers were prepared by the Bureau of the Census from maps of the Indianapolis Engineer. The Committee

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dwelling units were omitted. In the remaining 11 blocks a total of 306 dwelling units were missed. Two of these 11 blocks (with 168 dwelling units) were omitted entirely. In 9 blocks the scattered omissions amount to 138 dwelling units. If allowance is made for similar omissions in blocks not included in the field check (either because the block contained nonwhite inhabitants, or the Survey count differed from that of the Census by fewer than 10 dwelling units), it seems probable that a total of 500 to 600 of the dwelling units which should have been counted in the Survey were omitted. In other words, the completeness of the dwelling unit coverage of the Survey is approximately 99.5 per cent.[10]

Accuracy of Information

The accuracy of the Survey data can be measured by comparing them with data on the same items from the Study. The latter was begun a few weeks after the Survey,[11] and was limited to couples with the following characteristics: husband and wife native white; both Protestant; married in 1927, 1928, or 1929; wife under 30 and husband under 40 at marriage; neither married previously; both elementary school graduates; and residents of a city of 25,000 or more for at least eight years since marriage.[12] According to the Survey schedules, 2,589 couples met these requirements and were eligible for the Study. Of these, 1,648 were visited by women with graduate training in psychology, sociology, or social case work, and with successful experience as interviewers. From 860 couples a large amount of detailed information was obtained in a series of inter-

in charge of the Study is very grateful to the Bureau for making copies of these maps available for the Survey, since without them the taking of the Survey would have been much more difficult.

[10] The Survey also afforded some basis for appraising the completeness of the 1940 Census enumeration of dwelling units in Indianapolis. This subject will be discussed in an article planned for another publication.

[11] The median interval between Survey and Study visit was 2.6 months; the total range extended from less than one month to seven months.

[12] The bearing of errors in reporting these matters on actual eligibility for the Study is discussed in the Appendix.

views—three with the wife and one with the husband. Excellent *rapport* was established as a rule, and answers were obtained to a large number of highly personal questions. In the opinion of the field workers, nearly all of these husbands and wives tried to answer the questions as accurately as possible. From an additional 685 couples a smaller amount of information was obtained, most of it from the wife under conditions favorable to cooperation.[13] A comparison of the entries on these 1,545 schedules with those on the Survey schedules should permit a fairly reliable evaluation of the correctness of the latter.[14]

In order to use with maximum efficiency the funds available for

Table 1. The distribution by number of live births of eligible couples, and couples included in the test.[1]

Couples	Total	Number of Live Births				
		None	One	Two	Three	Four or More
Eligible Couples	2,589[2]	529	727	801	310	221
Couples in Test	1,545	371	340	354	275	205
Percentage Distribution:						
Eligible Couples	100.0	20.4	28.1	31.0	12.0	8.5
Couples in Test	100.0	24.0	22.0	22.9	17.8	13.3

[1] Based on data from the Survey schedules.

[2] Includes one couple for whom number of live births was not stated. "Eligible" couples are those meeting the requirements for the Study (explained in the text) on the basis of entries on the Survey schedules.

[13] Of the 103 couples from whom no information usable in this paper was obtained, 70 couples (4.2 per cent of the 1,648 couples visited) refused to cooperate in any way.

[14] It is recognized, of course, that (a) discrepancies between the two sets of data may arise from errors in the second rather than the first, or from conflicting errors in each, and (b) lack of discrepancy does not guarantee accuracy. But confidence in the accuracy of the data from the Study seems justified in view of the great amount of cross checking that was done, which enabled the interviewers to inquire carefully into apparent discrepancies due to faulty memory (which were frequent) or to attempts to mislead (which were rare).

It is also recognized that restricting the tests to native-white couples with at least a grammar school education may tend to minimize the frequency and magnitude of the discrepancies of an urban survey. The educational restrictions may not have important bearing, however, in view of the discussion in a subsequent section of the relation between accuracy and variations in education from eighth grade to college graduate.

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field work in the Study it was decided to try to interview nearly 80 per cent of the couples with no live birth, all of those with three or more, but only about half of those with one or two.[15] Primarily because of this sampling procedure, but in minor degree because of other factors such as the relation between size of family and the ease of finding the wife at home and securing her cooperation, the distribution by number of live births of the 1,545 couples included in the test differs widely from that of the 2,589 couples eligible for the Study (*see* Table 1). For this reason the relation between the number of live births and the accuracy of the Survey data deserves first consideration.

Accuracy of Reports by Number of Live Births

The relation between number of live births and the accuracy of replies to seven Survey questions may be examined in Table 2.[16] These data for wife informants show that with one exception the variations between groups in the frequency of different types of error are small in absolute numbers, and that the variations in the percentage of correct replies are small both absolutely and relatively. The single exception occurs in the reports on rent or rental value, the percentage agreeing within 4.9 per cent being 66.4 for couples with one live birth as compared with 53.3 to 55.4 for those with none, two, or three. But even here, as in the other cases, the relation is not consistent, for the second highest percentage correct (58.8) occurs among couples with four or more live births.[17] If the parity

The "number of reports" mentioned in the tables indicates the number of available comparisons on the given item. These numbers are smaller than 1,545 as a result of "unknowns" either in Form 1 (used in the Household Survey) or in Forms A, E, or S (used in the subsequent Study). *See* footnotes 2 and 3 of Table 2.

[15] The method of sampling, the reasons for choosing the sampling ratios that were used, and the representativeness of the couples in the sample and of those interviewed, will be discussed by the authors in a forthcoming article.

[16] The other questions are not considered in this section because (as will be shown in the following section) they were answered correctly for such a high proportion of couples that variations in accuracy are not important.

[17] Only one of the seventy possible differences between parities in the proportion of

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Table 2. Accuracy of reports, by question and number of live births.

Question and Accuracy	All Informants							Wife Informants						
	Total		Number of Live Births					Total		Number of Live Births				
	Unadjusted for Sampling	Adjusted for Sampling[1]	0	1	2	3	4 or More	Unadjusted for Sampling	Adjusted for Sampling[1]	0	1	2	3	4 or More
Year of Marriage														
Number of Reports[2]	1,527	2,588	367	337	352	270	201	1,194	2,028	260	271	280	209	174
Percentage:														
Correct	84.6	84.7	85.3	80.4	89.2	85.9	80.6	88.4	88.5	91.5	84.5	91.4	89.5	83.3
1 Year in Error	11.1	11.3	8.7	15.4	8.5	10.4	13.9	8.6	8.8	5.8	12.2	6.8	7.7	11.5
2+ Years in Error	4.3	4.0	6.0	4.2	2.3	3.7	5.5	3.0	2.7	2.7	3.3	1.8	2.9	5.2
Years in Large Cities														
Number of Reports[2]	1,489	2,588	352	326	347	266	198	1,164	2,028	249	264	276	204	171
Percentage:														
Correct	88.0	88.5	88.1	90.2	89.0	85.0	86.9	88.6	89.2	88.8	91.3	90.2	84.3	86.5
1-2 Years in Error	6.7	6.7	6.8	6.1	6.6	7.9	6.1	6.6	6.7	6.4	6.4	6.5	7.4	6.4
3+ Years in Error	5.2	4.8	5.1	3.7	4.3	7.1	7.1	4.8	4.1	4.8	2.3	3.3	8.3	7.0
Age of Wife														
Number of Reports[2]	1,501	2,588	361	331	345	267	197	1,177	2,028	257	266	275	208	171
Percentage:														
Correct	74.4	74.3	70.4	74.3	75.7	73.0	81.2	78.8	79.2	74.7	78.2	82.5	76.4	83.0
1 Year in Error	18.7	19.0	19.9	19.3	18.8	19.9	13.7	16.2	16.3	17.5	17.7	14.9	17.8	12.3
2+ Years in Error	6.9	6.7	9.7	6.3	5.5	7.1	5.1	4.9	4.5	7.8	4.1	2.5	5.8	4.7
Age of Husband														
Number of Reports[2]	1,491	2,588	355	330	344	266	196	1,172	2,028	254	265	275	207	171
Percentage:														
Correct	70.4	70.8	66.8	71.8	72.7	69.9	70.9	74.7	75.2	71.7	77.0	76.4	73.9	74.3

1 Year in Error	21.5	21.3	23.1	19.1	21.5	19.9	25.0	18.9	18.7	20.5	15.8	19.6	17.9	21.6
2+ Years in Error	8.1	7.9	10.1	9.1	5.8	10.2	4.1	6.3	6.1	7.9	7.2	4.0	8.2	4.1
Highest School Grade, Wife														
Number of Reports[2]	1,498	2,588	358	333	342	267	198	1,177	2,028	256	267	274	208	172
Percentage:														
Correct	76.8	76.8	74.0	76.6	78.1	78.3	77.8	80.6	80.8	79.7	80.5	82.1	80.8	79.7
1 Grade in Error	13.8	14.0	13.7	15.0	13.5	12.7	14.1	12.5	12.6	11.3	14.2	12.0	10.6	14.5
2+ Grades in Error	9.4	9.2	12.3	8.4	8.5	9.0	8.1	6.9	6.6	9.0	5.2	5.8	8.7	5.8
Highest School Grade, Husband														
Number of Reports[2]	1,487	2,588	354	327	343	268	195	1,168	2,028	253	264	273	208	170
Percentage:														
Correct	71.8	72.0	68.4	74.0	71.7	72.0	74.4	74.1	74.0	71.1	75.0	73.6	75.0	76.5
1 Grade in Error	16.9	16.7	17.8	13.8	17.8	17.5	17.9	16.7	16.8	17.0	14.4	19.0	15.9	17.1
2+ Grades in Error	11.3	11.3	13.8	12.2	10.5	10.4	7.7	9.2	9.2	11.9	10.6	7.3	9.1	6.5
Rent or Rental Value														
Number of Reports[3]	1,055	2,588	165	253	277	212	148	857	2,028	126	211	224	165	131
Percentage:														
Agreeing Within 4.9%[4]	55.7	56.0	55.2	60.9	52.7	52.8	57.4	58.0	58.3	54.0	66.4	55.4	53.3	58.8
Disagreeing by 5-14.9%	20.9	21.5	24.2	21.7	21.3	18.9	18.2	20.4	20.7	26.2	19.0	19.6	20.6	18.3
Disagreeing by 15+%	23.3	22.5	20.6	17.4	26.0	28.3	24.3	21.6	21.0	19.8	14.7	25.0	26.1	22.9

[1] In adjusting for sampling it is assumed for each parity that the accuracy of the Survey schedules is the same for couples for whom schedules were filled out in the Study as for other couples. There were 2,589 couples eligible for the Study but the number of live births was not reported for one of them.

[2] The number of replies to the first six questions varies because the interviewers did not always ask them in the same order when filling out Form A, and in 41 cases concluded the interview when information was obtained which differed from that on the Survey schedule in sufficient degree to disqualify a couple for the Study.

[3] The number of reports of rent or rental value is approximately 70 per cent of the number for each other question because the latter were in Form A of the Study schedules, whereas the rent or value question was on Forms E and S. Form A (but not Form E or S) was filled out for couples who proved to be ineligible, who refused to cooperate completely, and nearly 60 per cent of the childless couples who were classified as sterile.

[4] Nearly all the reports on rent or rental value either agree exactly or disagree by 5 per cent or more. For all informants only 0.7 precent of the reports are too low by less than 5 per cent, and 0.9 per cent too high by the same margin; for wife informants the corresponding percentages are 0.6 and 1.2, respectively.

groups are ranked as to accuracy of reports, each is found first or second for one or more questions, and also fourth or fifth for another or two. If the results for the seven questions are combined, the largest difference in percentage accurate is only 2.6, couples with two live births ranking highest at 79.3 per cent, and couples with three live births lowest at 76.7 per cent. Finally, adjusting for sampling has a negligible effect on the percentage distribution by accuracy, as is shown by the figures in the two columns under "Total" in Table 2.

As may be seen from a comparison of the right and left-hand panels of Table 2, the replies of all informants are somewhat less accurate than those of wives alone (a topic discussed further in the next section). Also, among all informants in contrast to wives, there is a slight tendency for the degree of accuracy to increase with the number of live births. The reasons are, first, the more accurate reports of wives than of other informants, and second, the direct relation between the number of live births and the likelihood of the wife being at home and seen by the canvasser. But even though variations between groups in the percentage of different errors and of correct replies are larger for all informants than for wife informants, they are small numerically[18] and show little relation to number of live births except a tendency toward more errors in the childless group. If the results for the seven questions are combined, the percentage of correct replies is highest (76.2) for couples with 2 and

correct replies of wives is very significant statistically, namely, rent or rental value: 1 and 3 parities. Nine of the differences are moderately significant, namely: (a) age of wife: 0 and 2 or 4+ parities; (b) year of marriage: 0 and 1 or 4+ parities, 2 and 1 or 4+ parities; (c) years lived in large cities: 1 and 3 parities; and (d) rent or rental value: 1 and 0 or 2 parities.

The foregoing and subsequent comparisons are based on the following measures of significance:

$$\frac{\text{Difference}}{\sigma \text{ difference}} > 2.57 \quad \text{very significant}$$

$$= 1.96 \text{ to } 2.57 \quad \text{moderately significant}$$

$$< 1.96 \quad \text{not significant}$$

[18] Only four of the seventy possible differences between parities in the proportion of correct replies of all informants are sufficiently large to have statistical significance, namely: (a) age of wife: 0 and 4+ parities, very significant; 3 and 4+ parities, moderately significant; and (b) year of marriage: 2 and 1 or 4+ parities, very significant.

4+ live births and lowest (73.9) for those with no live birth. As with wife informants, the difference (2.3) is too small to be important. And as before, adjusting for sampling makes changes of only 0.1 to 0.6 in the percentages of correct replies or specified errors. Hence, adjusting for sampling should not change significantly the analysis of the replies of all respondents.

Accuracy by Type of Question and Informant

The canvassers were instructed to try to obtain the information from the wife, husband, or a relative living with them, and to make several calls if necessary. If they were unable to contact such a person they were instructed to question some one else who was acquainted with the couple. In most of these cases the information was secured from a neighbor, but occasionally from a guest, servant, landlady, or janitor. If the wife (or husband) was seen by the canvasser and refused to state her (or his) age, the canvasser was instructed to record an estimate (labeled as such). In the subsequent interviews connected with the Study, the wife was seen personally in nearly all cases, and the husband in more than half of them.

Number of Wife's Children Living. As would be expected, the accuracy of the Survey data varies widely with the question and with the informant. "Number of wife's children living" was reported with scarcely any errors, only 17 in 1,483 cases.[19] (*See* Table 3.) Six children were omitted who should have been included, and 17 were included who should have been omitted, making a net overcount of 11. If only children under 5 are considered, the net

[19] Six of the errors occurred because two wives, one husband, and one housekeeper each reported one adopted child as born to the wife, and two wives each did the same for two such children. (These six couples are half of those with adopted children.) One occurred because a wife omitted a child by a previous marriage, and another because a wife omitted a son attending college. These eight discrepancies are easy to understand, but the other nine are not. Four wives simply reported one too many children, one wife two too many, and one three too many. Only one of the five had lost a child by death. In contrast, one wife with two and another with four children omitted one, while one wife with two omitted both. It is possible that in some of these cases, and perhaps also in others, the canvasser's entry was incorrect rather than the respondent's reply.

Table 3. Accuracy of reports, by question and informant.[1]

Accuracy	Informant					Informant				
	Total	Wife	Husband	Relative	Other	Total	Wife	Husband	Relative	Other
	Number of wife's children living					Number of live births to wife				
Number of Reports	1,483	1,164	147	114	58	1,481	1,164	147	114	56
Percentage:										
Correct	98.9	98.7	99.3	100.0	(98.3)	95.8	96.3	93.2	96.5	(91.1)
1 Too Low	0.3	0.3	—	—	—	2.2	1.9	4.1	1.8	(5.4)
2+ Too Low	0.1	0.1	—	—	—	0.2	0.2	0.7	—	—
1 Too High	0.5	0.5	0.7	—	(1.7)	1.4	1.2	1.4	1.8	(3.6)
2+ Too High	0.3	0.3	—	—	—	0.4	0.4	0.7	—	—
	Religious preference of wife					Religious preference of husband				
Number of Reports	1,498	1,174	148	116	60	1,493	1,170	147	116	60
Percentage:										
Correct	98.9	98.9	99.3	100.0	(95.0)	98.6	98.5	98.6	100.0	(96.7)
Incorrect	1.1	1.1	0.7	—	(5.0)	1.4	1.5	1.4	—	(3.3)
	Whether wife married previously					Whether husband married previously				
Number of Reports	1,502	1,174	152	117	59	1,499	1,171	152	117	59
Percentage:										
Correct	98.5	98.7	96.1	99.1	(100.0)	98.3	98.5	97.4	99.1	(94.9)
Incorrect	1.5	1.3	3.9	0.9	—	1.7	1.5	2.6	0.9	(5.1)
	State of birth of wife					State of birth of husband				
Number of Reports	1,499	1,175	149	117	58	1,492	1,172	148	116	56
Percentage:										
Correct	98.5	99.0	98.0	98.3	(91.4)	97.9	98.5	99.3	96.6	(83.9)
Incorrect	1.5	1.0	2.0	1.7	(8.6)	2.1	1.5	0.7	3.4	(16.1)

	YEAR OF MARRIAGE					YEARS IN LARGE CITIES				
Number of Reports	1,527	1,194	155	118	60	1,489	1,164	154	115	56
Percentage:										
Correct	84.6	88.4	79.4	69.5	(53.3)	88.0	88.6	85.1	87.0	(87.5)
1 Year Too Early (Few)	3.1	2.2	2.6	6.8	(15.0)	1.7	1.8	1.9	—	(1.8)
2 or 3 Years Too Early (Few)	0.7	0.5	—	1.7	(3.3)	1.3	1.5	1.3	—	(1.8)
4+ Years Too Early (Few)	0.7	0.6	1.9	—	—	0.7	0.6	—	1.7	(1.8)
1 Year Too Late (Many)	8.1	6.4	9.7	16.1	(20.0)	2.4	2.1	4.5	2.6	—
2 or 3 Years Too Late (Many)	2.2	1.3	5.8	3.4	(6.7)	3.0	2.4	5.2	6.1	(3.6)
4+ Years Too Late (Many)	0.8	0.6	0.6	2.5	(1.7)	2.9	3.0	1.9	2.6	(3.6)
	AGE OF WIFE					AGE OF HUSBAND				
Number of Reports	1,501	1,177	146	118	60	1,491	1,172	145	115	59
Percentage										
Correct	74.4	78.8	58.2	70.3	(33.3)	70.4	74.7	67.6	54.8	(20.3)
1 Year Too Low	9.5	7.8	16.4	11.0	(23.3)	9.5	9.0	5.5	13.9	(18.6)
2 Years Too Low	2.3	1.5	2.7	5.1	(10.0)	1.5	1.3	—	2.6	(8.5)
3+ Years Too Low	2.1	1.5	2.1	2.5	(13.3)	2.7	1.8	2.8	5.2	(17.0)
1 Year Too High	9.2	8.4	13.7	10.2	(11.7)	12.1	9.9	18.6	20.0	(23.7)
2 Years Too High	1.4	1.0	4.8	—	(3.3)	1.7	1.5	2.8	1.7	(5.1)
3+ Years Too High	1.1	0.8	2.1	0.8	(5.0)	2.1	1.8	2.8	1.7	(6.8)
	HIGHEST SCHOOL GRADE, WIFE					HIGHEST SCHOOL GRADE, HUSBAND				
Number of Reports	1,498	1,177	153	114	54	1,487	1,168	152	112	55
Percentage:										
Correct	76.8	80.6	63.4	62.3	(61.1)	71.8	74.1	64.5	64.3	(60.0)
1 Grade Too Low	4.7	3.5	7.8	8.8	(13.0)	6.4	6.3	5.9	8.0	(7.3)
2 Grades Too Low	1.6	1.2	1.3	6.1	(1.9)	2.9	2.5	3.9	3.6	(7.3)
3+ Grades Too Low	1.1	0.8	1.3	3.5	—	1.4	1.1	—	6.3	(1.8)
1 Grade Too High	9.1	9.0	11.8	8.8	(5.6)	10.5	10.4	11.8	7.1	(14.5)
2 Grades Too High	4.5	3.6	8.5	6.1	(11.1)	4.6	3.7	8.6	7.1	(7.3)
3+ Grades Too High	2.2	1.3	5.9	4.4	(7.4)	2.4	2.0	5.3	3.6	(1.8)

[1] Percentages based on fewer than one hundred reports are shown in parentheses. *See also* Table 2, footnote 2.

excess is 4. This situation is quite different from that of the Census, for it is probable that between 4.0 and 5.5 per cent of the white children under 5 in Indianapolis were not enumerated in 1940, primarily because the respondents failed to report all children's names.[20] A smaller proportion of omissions of children would be expected in the Survey schedules tested than in the Census for several reasons. Probably the more important are: (a) the test is confined to couples in which each spouse was reported as married once only, so that most broken marriages are excluded; (b) the necessity of inquiring specifically about children was emphasized strongly while the canvassers were being trained; and (c) the canvassers had fewer questions to ask, hence fewer instructions to keep in mind.

Number of Live Births to Wife. The related question "number of live births to wife" also was answered in the Survey with relatively few errors, only 62 being found in 1,481 replies. In more than half of these cases (32) it is probable that a child who had died was omitted, and in over a fifth (13) a pregnancy which terminated in nonviable birth apparently was included. In the remaining 17 cases the misstatements parallel those in the number of children living discussed above. Overstatements regarding live births fail to balance understatements, but the net error is small. Strangely enough the proportion of errors in replies of husbands is higher than that in those of relatives (a large majority of whom are relatives of the wife) and nearly as high as that in the replies of "others." The differences are not statistically significant, however.

Religious Preference and Previous Marriage. The questions regarding religious preference of wife and husband (Protestant,

[20] According to an estimate made by the Scripps Foundation for Research in Population Problems and used by the Bureau of the Census, nearly 6.4 per cent of the white children under 5 in the United States were not enumerated in 1940. (*See* U. S. Department of Commerce, Bureau of the Census, Population—Special Reports, "Estimated Population in Continental United States, by Age, Color, and Sex: 1940 to 1942" Series P-44, No. 9.) The same method indicates that approximately 5.2 per cent of those in Indiana were not enumerated. Omissions are believed to be less frequent in large cities than in rural areas.

Catholic, Jewish, other, or none), and whether she or he had been married previously were answered with a high degree of accuracy, and with little variation by class of informant. Only 17 errors were found in reports of religious preference of wife, and 22 in reports regarding previous marriage. For husbands, the corresponding numbers are small also, 21 and 25. The main reason for so few errors undoubtedly lies in the fact that a high proportion of the wives and husbands in Indianapolis are Protestants, and a still higher proportion have been married once only.[21] With so large a majority having the characteristics indicated, most of the "other" informants who did not know the answers to these questions could guess them correctly.[22]

State of Birth. The information on state of birth collected from wives, husbands, and relatives also is highly accurate, the percentage of correct replies varying from 96.6 to 99.3 (*see* Table 3). "Others" were less reliable informants, reporting correctly for 91.4 per cent of the wives but only 83.9 per cent of the husbands.[23] They probably were helped in many cases by the fact that between two-thirds and three-fourths of the wives and husbands were born in Indiana. Over half of the errors in state of birth of wife occurred because a wife

[21] Among the 51,871 native-white couples with wife under 45 in the Indianapolis Survey, 87.9 per cent of the wives and 86.4 per cent of the husbands were reported as married once only. Among the 41,498 native-white couples with wife under 45 and neither spouse married more than once, 83.5 per cent of the wives and 82.3 per cent of the husbands were reported as Protestants. *See* Whelpton and Kiser, *op. cit.*, pp. 225-226 (Reprint pp. 5-6).

It is possible, of course, that the frequency of errors for these questions would have been different if the test had included couples listed in the Survey as having one spouse (or both) Catholic, Jewish, or married previously, but the relatively small size of these groups precludes large differences.

[22] It is interesting to note that the percentage of incorrect reports on "Whether married previously" in this Indianapolis Survey (1.7 and 1.5 for husband's and wife's status, respectively) agrees closely with the percentage of reports which differ as to marital status (1.4) in two successive Philadelphia surveys. (*See* Palmer, Gladys L.: Factors in the Variability of Response in Enumerative Studies. *Journal of the American Statistical Association,* June, 1943, xxxviii, No. 222, p. 146. The percentage is for the districts with 60 per cent or more native-white residents.)

[23] The following differences in the frequency of errors are statistically significant: (a) state of birth of wife: wives and "others," moderately significant; and (b) state of birth of husbands: wives and "others," and husbands and "others," very significant; relatives and "others," moderately significant.

born in another state was reported born in Indiana. With husbands, however, over 80 per cent of the errors occurred because the informant thought the husband was born outside of Indiana but failed to name the correct state. Perhaps this difference results from the traditional belief that men move around more than women.

Residence Since Marriage. The residence query was phrased "Have you (has the couple) lived in a city of 25,000 or more all the time since marriage?" If the answer was "No" a second question "How many years did you (they) live in smaller places?" was asked. The correct information was given by 88 per cent of the total respondents, most of whom merely said "Yes" to the first question. Because one category includes so many of the couples in the test there is little variation in accuracy by type of informant.[24] Over half of the errors are one or two years, but one-fifth of them are five years or more. A large proportion (approximately two-thirds) of all the errors occurred because some respondents had an exaggerated idea of the size of a city, and only a small fraction because of misstatements of the number of years in the cities mentioned. A few errors occurred because residence in the suburbs of a large city (usually Indianapolis) was considered as being in the city proper. Such results would be expected from the wording of the query and the restriction of the test to couples reported in the Survey as having married in 1927, 1928, or 1929 and lived eight or more years in a city of 25,000 or larger.

Year of Marriage. Errors are more frequent in the answers to the remaining questions, especially for "other" respondents. Year of marriage was reported incorrectly by nearly half of this group, though most of the errors are of only one year.[25] Husbands made nearly twice as many errors as wives, but only two-thirds as many

[24] None of the differences by informant in the percentage of correct reports on residence is statistically significant.

[25] The following differences in the percentage of correct replies are very significant: wives and each of the other groups; husbands and "others." That between relatives and "others" is moderately significant.

as relatives. Too recent a year was named in over two-thirds of the incorrect reports, wives making such a mistake about as often as other informants. This bias gives no support to the old saw "Do married people live longer than single people? No, it just seems longer." One might expect that in some cases the reported year of marriage would be earlier than the actual year because of a desire to conceal a premarital conception, but this did not occur for any of the forty-five couples in the Study for whom the computed date of the first conception preceded the reported marriage date. On the contrary, two such marriages were reported in the Survey as having occurred a year later than they actually did, rather than a year earlier.

As stated previously, the only couples interviewed in connection with the Study were those reported in the Survey as married in 1927, 1928, or 1929. With such a recent and narrow range of time, little variation in accuracy with year of marriage would be expected. It is surprising, therefore, to find a significant inverse relationship, with the smallest proportion of errors (12.3 per cent) for couples reported as married in 1927, and the largest proportion (17.6 per cent) for those reported as married in 1929. (*See* Table 4.) Most of it is due to the difference in the frequency of reports which are one

Table 4. Accuracy of reports of year of marriage, by year (all informants).

Accuracy	Year of Marriage			
	Total	1927	1928	1929
Number of Reports	1,527	465	500	562
Percentage:				
Correct	84.6	87.7	84.2	82.4
1 Year Too Early	3.1	3.4	3.2	2.7
2-3 Years Too Early	0.7	0.6	0.8	0.5
4+ Years Too Early	0.7	0.4	1.0	0.5
1 Year Too Late	8.1	5.6	8.2	10.0
2-3 Years Too Late	2.2	1.5	1.8	3.0
4+ Years Too Late	0.8	0.6	0.8	0.9

year too late, namely, 5.6 per cent and 10.0 per cent, respectively, for the couples reported as married in 1927 and 1929.[26]

Age. Age of wife was reported correctly by nearly four-fifths of the wives,[27] but by a substantially lower proportion of husbands, relatives, and "others." The last were especially unreliable respondents, two-thirds of their replies being incorrect, and approximately one-sixth of them placing the wife's age in the wrong five-year group.[28] Oddly enough, husbands made more errors than relatives in reporting wife's age. Reports of husband's age are less accurate than those of wife's age, except when husbands are the respondents. Only about three-fourths of the wives and two-thirds of the husbands stated husband's age correctly, though here, too, most of the errors are of merely one year.[29] The guesses of "others" as to husband's age are poor, only one in five being correct, and over one in four being in the wrong five-year group.

[26] The difference between this pair of percentages is very significant statistically, that between the preceding pair is moderately significant.

There was no appreciable tendency to report year of marriage as a round number, as was the case with age (discussed later).

[27] Table 3 shows 21.2 per cent of the wives as reporting their own age incorrectly. In a small proportion of these cases the wife either stated her age approximately rather than exactly, or refused to state it at all. If the approximate age given was a range, e.g., between 35 and 40, the mid-point was used. If no figure was stated the canvasser's estimate was used, if available.

[28] The following differences in the percentage of correct reports on age of wife are statistically significant: wives and husbands, wives and "others," husbands and "others," and relatives and "others," very significant; wives and relatives, and husbands and relatives, moderately significant.

[29] The difference between wives and husbands in the percentage of correct reports on age of husband is not significant, between husbands and relatives is moderately significant, and between other pairs is very significant.

Comparing the reports of age in the 1933 and 1936 Census of the Eastern Health District, Densen found that 78.84 per cent of those for white males and 77.55 per cent of those for white females were within the "true difference group" (i.e., the difference between the age reported on the two dates agreed with the time which elapsed). The simple average of his percentages for the age groups dealt with in the present article (primarily 20-49 for males and 15-44 for females) is 70.2 and 74.0, respectively. These are somewhat below the percentages of correct reports for age of wives and husbands in the Indianapolis Survey. (*See* Densen, Paul M.: Family Studies in the Eastern Health District. II. The Accuracy of Statements of Age on Census Records. *The American Journal of Hygiene,* July, 1940, xxxii, No. 1, Sec. A. p. 20.)

Densen found that overstatements of age outnumbered understatements somewhat in 1922 and 1933, but that the opposite was true in 1936 (*Ibid.*, p. 35).

Although there may be a general belief that women tend to conceal age more than men, reports of their own age were made more accurately in the Survey by wives than by husbands (*see* Table 3). Moreover, there is little bias in the age reported by wives, almost as many overstating as understating it. Among husbands, however, overstatements of age are nearly three times as numerous as understatements. "Other" respondents flattered wives by reporting them too young more than twice as often as too old, but there is little bias in their reports on husband's age.

Differences between the ages of husband and wife may have a slight influence on the accuracy of reports on age. The percentage of correct reports of husband's age is highest (71.2) when the wife is younger than the husband, and lowest (65.2) when the wife is older than the husband. Correct reports of age of wife are most frequent (75.6 per cent) when the wife is the younger, but least frequent (68.9 per cent) when wife and husband are the same age. But in view of the small number of cases the differences are not statistically significant.[30]

A more important factor affecting the accuracy of reported age is

Table 5. Accuracy of reports of age, by age (all informants).[1]

Accuracy	Age of Wife					Age of Husband				
	Total	25-29	30-34	35-39	40-44	Total	28-34	35-39	40-44	45-52
Number of Reports	1,501	159	825	427	90	1,491	548	673	210	60
Percentage:										
Correct	74.4	81.8	76.8	70.0	(58.9)	70.4	70.1	73.7	63.8	(58.3)
1 Year Too Low	9.5	10.1	8.1	10.1	(18.9)	9.5	10.2	7.1	14.3	(11.7)
2 Years Too Low	2.3	0.6	2.2	2.3	(5.6)	1.5	1.8	1.0	2.9	—
3+ Years Too Low	2.1	1.3	2.1	1.6	(6.7)	2.7	3.1	1.0	6.7	(5.0)
1 Year Too High	9.2	5.7	9.2	11.5	(4.4)	12.1	13.1	12.3	8.6	(11.7)
2 Years Too High	1.4	—	1.1	2.3	(2.2)	1.7	0.9	2.4	1.9	(1.7)
3+ Years Too High	1.1	0.6	0.5	2.1	(3.3)	2.1	0.7	2.4	1.9	(11.7)

[1] Percentages based on fewer than one hundred reports are shown in parentheses. *See also* Table 2, footnote 2.

[30] For 1,180 couples, age at last birthday was one or more years higher for husband than for wife, for 146 couples it was one or more years lower, and for 215 couples it was the same.

age itself. With wives, the frequency of errors varies directly and in important degree with age, increasing from 18.2 per cent at ages 25-29 to 41.1 per cent at ages 40-44 (*see* Table 5).[31] Most of the increase is due to understatements of age, especially those of one year. Evidently the popular belief that women tend to forget birthdays as they approach middle life has some foundation in fact. The relation between age of husband and accuracy of reports of age is similar to that for wives, but somewhat smaller and less regular. The frequency of errors is lowest (26.3 per cent) at ages 35-39, and highest (41.7 per cent) at ages 45-52, but only the difference between the percentages for ages 35-39 and 40-44 is very significant statistically. Understatements of one year or of three or more may be somewhat more numerous for those 40 or over than for those younger, and the opposite may be true for overstatements of one year.[32]

[31] The statistical significance of the differences between age groups is as follows: (1) Percentage of correct replies: (a) wife, 25-29 or 30-34 and 35-39 or 40-44, very significant; 35-39 and 40-44, moderately significant; and (b) husband, 35-39 and 40-44, very significant; 35-39 and 45-52, moderately significant. (2) One year too low: (a) wife, 30-34 and 40-44, very significant; 35-39 and 40-44, moderately significant; and (b) husband, 35-39 and 40-44, very significant. (3) One year too high: (a) wife, 35-39 and 40-44, very significant; 25-29 and 35-39, and 30-34 and 40-44 moderately significant.

[32] An important proportion of the errors results from a tendency to report age as a round number, beginning between ages 20 and 25. Usually it is a number ending in 0 or 5, but occasionally it is one ending in 2 or 8. If it were not for this tendency, the number of persons of a given age would be approximately 50 per cent of the sum of the number of persons one year older and one year younger. The actual percentages for selected ages (based on the reports for 41,498 native-white couples, each spouse married once only, and wife under 45) are shown below. There is some tendency for rounding to become more frequent as age increases, as may be seen by comparing the percentages at ages 25 and 35, 28 and 38, etc. This explains in part why the frequency of errors in age increases as age increases.

The tendency to report age in round numbers is very much greater in the Survey than in the Census, perhaps because of the official character of the Census, and the very much larger amount of advance publicity which it received, and which called attention to the questions to be asked.

Age	*Persons of Specified Age in Per Cent of the Sum of Those One Year Older and Younger*	
	Wives	*Husbands*
25	58.9	59.5
28	55.5	52.9
30	76.4	73.8
32	55.3	55.3
35	66.7	62.4
38	59.4	55.8
40	84.8	80.3
42	55.2	56.2

Highest School Grade Completed. The accuracy of wives', husbands', and relatives' replies to the questions on education is much the same as for the questions on age (*see* Table 3). As before, wives are easily the best informants, with husbands and relatives nearly tied for second place.[33] Husbands made fewer errors in reporting wife's education than wife's age and more errors in reporting their own education than age. The opposite is true for relatives. "Others" did much better with education than with age, comparing favorably on the former with relatives.

The highest grade of school completed by themselves was reported too high more than twice as often as too low by both wives and husbands, but there was no bias in the relatives' reports on education of the wives and husbands. Wives were guilty of exaggerating by one grade about as often as all other informants, but not by two or more grades. Part of the upward bias results from the fact that some Survey respondents included training which is not accredited in the regular school and college system, for example in

Table 6. Accuracy of reports of highest school grade completed, by highest grade (all informants).[1]

Accuracy	Wife						Husband					
	Total	Grade 8	High School 1-3	High School 4	College 1-3	College 4+	Total	Grade 8	High School 1-3	High School 4	College 1-3	College 4+
umber of Reports	1,498	280	440	543	115	120	1,487	389	393	389	131	185
Percentage:												
Correct	76.8	78.6	68.9	82.1	79.1	75.0	71.8	75.8	63.1	74.8	69.5	76.8
1 Grade Too Low	4.7	5.4	7.3	2.0	1.7	8.3	6.4	5.7	10.4	2.6	6.1	7.6
2-3 Grades Too Low	2.0	4.3	2.3	1.3	0.9	—	3.6	4.9	5.3	2.0	3.8	—
4+ Grades Too Low	0.7	3.2	—	0.2	—	—	0.7	1.8	0.5	0.5	—	—
1 Grade Too High	9.1	7.1	15.9	3.9	15.7	6.7	10.5	10.0	15.5	6.2	13.7	7.6
2-3 Grades Too High	5.5	1.4	5.5	7.9	2.6	6.7	5.8	1.5	4.6	11.6	4.6	5.9
4+ Grades Too High	1.3	—	0.2	2.6	—	3.3	1.2	0.3	0.5	2.3	2.3	2.2

[1] *See also* Table 2, footnote 2.

[33] The differences between wives and each of the other groups in the percentage of correct reports on education of wife are very significant statistically; those for education of husband are moderately significant.

business colleges, as nurses, and through correspondence courses. When such cases were brought to light in the Study, the training was omitted in the determination of highest grade, primarily because of the difficulty of evaluating it. Another cause of the upward bias is a tendency for the schooling of one spouse to be exaggerated if the other went further in school. In some such cases the highest grade completed by the latter was reported for the former as well.

No definite relation appears between the highest grade of school completed and the accuracy with which it is reported (*see* Table 6).[34] As a rule, however, errors are more frequent for persons who attended high school or college for only one, two, or three years, than for those who graduated. With husbands, the frequency of errors is almost exactly the same for those who stopped after the eighth grade as for those who finished high school or college. With wives, however, the proportion of errors is somewhat lower for high school graduates (17.9 per cent) than for college graduates (25 per cent), but the difference is not significant statistically.

The upward bias in reported education, mentioned above, is found in every group except that composed of persons reported as stopping at the eighth grade. Among the husbands in this group about as many had gone beyond the eighth grade as had failed to complete it, whereas among wives the former exceeded the latter by 3 to 2.[35] In contrast, among those reported as completing at least one year of high school, overstatements outnumber understatements by nearly 3 to 1 for wife's education and by nearly 2 to 1 for husband's education. If the comparison is limited to errors of two years or more, the ratios are approximately 5 to 1 and 2.5 to 1, respectively.[36]

[34] Data like those in Table 6, but for wife informants only, are presented in Table 12.

[35] Some of the reported eighth graders who had completed one or more years of high school came from communities with only seven grades before high school.

[36] Comparisons by class intervals show that incorrect reports of age and education in the Indianapolis Survey are less numerous than "different reports" in the two successive Philadelphia surveys mentioned earlier. Age was reported in the correct interval for 91.2 per cent of the Indianapolis people, and in the same interval for 87.7 per cent of the people

(Continued on page 277)

Rent or Rental Value. Disagreements between the information collected in the Survey and that collected in the Study are much more pronounced in connection with the rent or rental value of a dwelling unit than in connection with the other questions. The first report differs from the second by 5.0 per cent or more for over two-fifths of the wives, half of the husbands, more than half of the relatives, and nearly two-thirds of the "other" informants (*see* Table 7).[37] This is by far the worst showing for wives, and somewhat the worst for husbands and relatives, but "others" did better with this question than with age of husband or wife. When large disagreements are considered, however, all groups are found to be much worse informants regarding rent or rental value than for other questions. Understatements of rent or rental value amounting to 25 per cent or more were made by one-tenth of the wives, and by one-fifth of the "others."[38]

If wives' reports for owned and rented dwelling units are considered separately, the frequency of agreements is found to be about the same for rent of rented homes as for age and education, but to be barely half as much for rental value of owned homes (*see* Table 7).[39] Such a situation is to be expected. In most cases rent is a stipulated monthly amount, frequently paid by wives, and usually known to them. Rental value, in contrast, is a matter of opinion unless the owner knows the rent of a similar house near-by, or has recently

in both Philadelphia surveys. The two studies disagree to a larger extent as to reports on education, 90.6 per cent of those in the Indianapolis Survey being in the correct class interval, but only 77.8 per cent of those in the two Philadelphia surveys being in the same class interval. In order to compare accurately the percentage of *different* reports in the Philadelphia study with the percentage of *incorrect* reports in the Indianapolis Study it is necessary to know the frequency with which a specific question was answered the same for each person (either correctly or with an identical mistake) in both Philadelphia surveys.

[37] The difference between wives and "others" in the percentage of replies agreeing within 4.9 per cent is very significant, but the other differences are not significant statistically. Reports disagreeing by 0.1 to 4.9 per cent are rare, only 1.6 per cent of the total number.

[38] The differences by informant are too small to be statistically significant for the number of schedules involved.

[39] Among all informants, agreement within 4.9 per cent is found for 70.6 per cent of renters and 37.0 per cent of the owners.

Table 7. Agreement between reports of rent, or rental value, by informant, and for wife informants by tenure and length of intervening interval.[1]

Accuracy and Tenure	Informant				
	Total	Wife	Husband	Relative	Other
Number of Reports	1,055	857	92	67	39
Percentage:					
Agreeing Within 4.9 Per Cent	55.7	58.0	(50.0)	(46.3)	(35.9)
Too Low by 5.0-14.9 Per Cent	14.1	14.1	(13.0)	(13.4)	(17.9)
Too Low by 15-24.9 Per Cent	7.6	7.1	(9.8)	(7.5)	(12.8)
Too Low by 25+ Per Cent	11.1	10.0	(15.2)	(13.4)	(20.5)
Too High by 5.0-14.9 Per Cent	6.8	6.3	(8.7)	(10.4)	(7.7)
Too High by 15+ Per Cent	4.6	4.4	(3.3)	(9.0)	(5.1)
	Length of Intervening Interval				
Wife Informants, Owners	Total	Less Than 2 Months	2–2.9 Months	3–3.9 Months	4 or More Months
Number of Reports	381	128	103	69	81
Percentage:					
Agreeing Within 4.9 Per Cent	38.8	50.8	31.1	(31.8)	(35.8)
Too Low by 5.0-14.9 Per Cent	17.1	10.2	18.4	(21.7)	(22.2)
Too Low by 15-24.9 Per Cent	10.0	7.0	9.7	(10.1)	(14.8)
Too Low by 25+ Per Cent	17.1	12.5	20.4	(18.8)	(18.5)
Too High by 5.0-14.9 Per Cent	10.0	11.7	10.7	(10.1)	(6.2)
Too High by 15+ Per Cent	7.1	7.8	9.7	(7.2)	(2.5)
Wife Informants, Renters					
Number of Reports	475*	184	110	80	100
Percentage:					
Agreeing Within 4.9 Per Cent	73.3	77.2	73.6	(65.0)	72.0
Too Low by 5.0-14.9 Per Cent	11.8	6.0	14.5	(18.8)	14.0
Too Low by 15-24.9 Per Cent	4.8	4.9	4.5	(7.5)	3.0
Too Low by 25+ Per Cent	4.4	4.3	3.6	(5.0)	5.0
Too High by 5.0-14.9 Per Cent	3.4	4.9	—	(3.8)	4.0
Too High by 15+ Per Cent	2.3	2.7	3.6	—	2.0

[1] Percentages based on fewer than one hundred reports are shown in parentheses. *See also* Table 2, footnotes 3 and 4.

* Includes one case with length of intervening interval not stated.

bought the property, refused offers, or tried to sell.[40] Furthermore, rent is commonly established for several months or a year in advance, whereas opinions as to rental value can change at will.

The greater frequency and size of the disagreements between the successive reports on rent or rental value could result from the rise in rents and property values which presumably occurred during the weeks or months that elapsed between the Survey and the Study. An allowance for the time lag was made with the other questions where it was needed,[41] but was impracticable in this case. A classification of wife informants by the number of months between the two interviews (Table 7) shows clearly that there is a small direct relationship between this factor and the frequency of disagreements for rented homes, and a somewhat larger one for owned homes. The proportion of reports agreeing is highest when the interval is less than two months (77.2 per cent for renters and 50.8 per cent for owners). Irregular fluctuations occur between longer interval groups, the percentage of reports agreeing closely varying between 65.0 and 73.6 per cent for renters and between 31.1 and 35.8 per cent for owners.[42] These figures indicate that even if the two reports on rental value had referred to the same date and the effect of the real estate boom were thus removed, the information about rental value would still be much less accurate than that about the other items included in the Survey.[43]

[40] In an important proportion of cases in the Survey the informant estimated the probable market price of the dwelling unit, and the monthly rental value was computed as 0.8 per cent of this figure.

[41] These are number of live births and living children, age, and years lived since marriage in a city of 25,000 or more.

[42] The statistical significance of the differences in the proportions agreeing within 4.9 per cent is as follows: (1) Owners: (a) less than 2 months and 2-2.9 or 3-3.9 months, very significant; and (b) less than 2 months and 4 or more months, moderately significant. (2) Renters: no difference significant.

[43] A minor reason for the more frequent and larger disagreements with this question than with others could be the fact that the canvassers were instructed to estimate the rent or rental value if it could not be secured from the respondent and if there were similar dwelling units near-by for which the facts were reported by the occupants. Since the number of canvassers' estimates is very small relatively, however, they are believed to have no appreciable effect on the frequency and size of disagreement.

Table 8. Accuracy of wives' reports on one item by accuracy of their reports on other items.[1]

Question and Accuracy	No. of Reports[2]	Year of Marriage		Years in Large Cities		Age of Wife		Age of Husband		Highest School Grade			
										Wife		Husband	
		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
Year of Marriage													
Correct	1,055	—	—	89.0	11.0	79.8	20.2	75.8	24.2	81.4	18.6	74.9	25.1
Incorrect	139	—	—	87.0	13.0	71.0	29.0	66.1	33.9	75.2	24.8	68.1	31.9
Years in Large Cities													
Correct	1,031	89.6	10.4	—	—	78.8	21.2	75.3	24.7	80.5	19.5	74.9	25.1
Incorrect	133	87.7	12.3	—	—	83.7	16.3	74.4	25.6	82.0	18.0	69.5	30.5
Age of Wife													
Correct	928	90.5	9.5	88.1	11.9	—	—	81.3	18.7	83.1	16.9	76.1	23.9
Incorrect	249	85.5	14.5	91.1	8.9	—	—	50.2	49.8	71.5	28.5	67.3	32.7
Age of Husband													
Correct	876	90.8	9.2	88.8	11.2	85.8	14.2	—	—	81.2	18.8	75.0	25.0
Incorrect	296	86.1	13.9	88.4	11.6	58.4	41.6	—	—	79.3	20.7	71.9	28.1
Highest School Grade, Wife													
Correct	949	90.4	9.6	88.6	11.4	81.4	18.6	75.2	24.8	—	—	78.1	21.9
Incorrect	228	86.7	13.3	89.6	10.4	69.0	31.0	72.9	27.1	—	—	58.0	42.0
Highest School Grade, Husband													
Correct	865	90.6	9.4	89.5	10.5	80.8	19.2	75.4	24.6	85.0	15.0	—	—
Incorrect	303	87.3	12.7	86.6	13.4	73.2	26.8	72.2	27.8	68.7	31.3	—	—

[1] Percentages relate to accuracy of replies to questions at the top for wives replying correctly or incorrectly to questions at the left.

[2] This column shows the number and correct and incorrect reports for the questions listed at the left. When these are classified by the questions in the column headings, the number is reduced somewhat. The maximum reduction in the number of correct reports is 25 (highest school grade of wife by years in large cities) and that in the number of incorrect reports is 20 (year of marriage by the highest school grade of husband). *See also* Table 2, footnote 2.

It is interesting to note that for the interval of less than two months the ratio of understatements to overstatements is a little higher for tenants (2.0 to 1) than for owners (1.5 to 1). Apparently the proverbial fear of owners that stating the true value of their property would mean higher taxes did not bias their replies in the Survey. For the interval four or more months, in contrast, the ratio of understatements to overstatements is higher for owners than for renters. Apparently the proportion of tenants whose rent was raised between the Survey and the Study is smaller than the proportion of owners who thought that real estate values were rising.

Survey and Study reports on rent or rental value agree less frequently if the husband rather than the wife was the Survey informant. Such a situation is to be expected when it is remembered that the rent or value question in the Study was answered by the wife as a rule. Although rental value of owned homes must be an estimate in most cases, the difference between estimates on dates one to six months apart should be smaller if the same person is the informant at both times than if there is a change in the informant.

Interrelation of Errors. If a respondent gives an incorrect report on one item, is she (or he) likely to give an incorrect report on another item? If all informants are considered, an affirmative answer would be expected since it has been shown that for most questions the frequency of errors is highest for "other" informants and lowest for wives. To analyze the question more precisely, attention will be confined to the reports of wives.

On the whole, the wives who answered incorrectly one of the six questions for which errors were most frequent[44] were more likely than the other wives to give an incorrect answer to one or more of the other five questions. This may be seen by examining Table 8, which shows the wives reporting correctly and incorrectly for each

[44] The six questions relate to year of marriage, years in large cities, and age and education of wife and husband. Rent or rental value of dwelling unit is omitted from this analysis since for home owners it is usually a matter of opinion rather than fact.

item, classified by the accuracy of their reports for each other item. Among the thirty combinations in the table, all but four follow the rule.[45] The most striking case relates to the reports on age. Of the wives who reported their own age correctly 81.3 per cent reported their husband's age correctly. In contrast, of the wives who misstated their own age, only 50.2 per cent gave their husband's age correctly. A similar situation is found in the reports on highest grade of school completed. The right answer as to their husbands' education was given by 78.1 per cent of the wives who correctly reported their own educational attainment but by only 58.0 per cent of the others. The four exceptions to the rule involve "years in

Table 9. Actual percentage distribution of wives by number of errors in replies to six questions and random distribution that would result from chance if there were no interrelation of errors.

Percentage Distribution Considered	No Error	One Error	Two Errors	Three Errors	Four Errors	Five Errors	Six Errors
All Cases							
Actual[1]	35.1	33.4	20.1	8.7	2.2	0.4	0.1
Random[2]	27.6	40.1	23.7	7.3	1.2	0.1	*
One or More Errors							
Actual	—	51.5	31.0	13.4	3.4	0.6	0.2
Random	—	55.4	32.7	10.1	1.7	0.1	*
Two or More Errors							
Actual	—	—	63.8	27.6	7.0	1.3	0.3
Random	—	—	73.4	22.6	3.7	0.3	*

[1] Based on distribution of 1,127 wives reporting on all six questions in both the Survey and Study.
[2] Computed from the percentage of correct and incorrect replies to each of the six questions.
* Less than 0.05 per cent.

[45] In comparing wives answering one question correctly with those answering it incorrectly, the statistical significance of the difference in the proportion answering other questions incorrectly is as follows: (a) very significant: age of wife and age of husband, age of wife and highest school grade of wife or husband, and highest school grade of wife and that of husband; and (b) moderately significant: year of marriage and age of wife, and year of marriage and age of husband.

Only three of the fifteen correlation coefficients computed for correct and incorrect replies to pairs of questions exceed ±0.10, namely, age of wife and age of husband (.29 ± .03), age of wife and education of wife (.12 ± .03), and education of wife and education of husband (.18 ± .03).

large cities," and probably are due in part, if not wholly, to the wording of the question.[46] In none of these cases is the difference large.

The tendency for errors to be concentrated in particular respondents may also be seen by comparing the actual distribution of wives by number of errors in replies to the six questions with the random distribution that would occur from chance alone. As shown in Table 9 the actual percentage of wives making no error (35.1) is over one-fifth above the percentage of a chance relationship (27.6). Among those making one or more errors, the actual percentage making *only* one (51.5) is somewhat below that based on random distribution (55.4). Among those making at least two errors, the actual percentage making *only* two (63.8) is much further below the random (73.4). Apparently, therefore, the tendency for errors in the reports of wives to be concentrated in certain individuals is of some importance.[47]

Accuracy of Wives' Reports, by Socio-Economic Status

A question commonly raised in discussions of the reliability of data like those under consideration is whether accuracy varies with the socio-economic status of the respondent. In an attempt to obtain a partial answer, the information collected has been classified by the three measures of socio-economic status available from the Survey, namely, tenure, rent or rental value of home, and highest grade of school completed. Because of the great variation between informants in accuracy of reports, and because nearly 80 per cent of the Survey informants were wives, it is desirable to eliminate this variable and confine this section to reports made by wives.

[46] Some wives whose reply "Yes" to the question "Have you lived all the time since marriage in a city of 25,000 or more?" was correct, would not have answered correctly if the question had been worded "How many years since marriage have you lived in a city of 25,000 or more?"

[47] A somewhat greater tendency probably would be shown if in forty-one cases the interviewers had not failed to complete the first Study schedule when the wife gave information differing sufficiently from that obtained in the Survey to make the couple ineligible for the Study.

By Tenure. Tenure is the first measure of socio-economic status that will be considered. In part it measures financial standing, since the Survey as a whole shows the proportion of owners increasing from 8.4 per cent in the rental-value group under $15 to 83.2 per cent in the rent or value group $80 or more, and the median monthly rental value of owned homes to be about $38 but the median rent paid by tenants to be about $28.[48] In part it probably measures stability and a willingness to assume responsibility.

The differences between owners and renters in accuracy of information collected are small, but except for the question on rent or value of dwelling unit (discussed previously and shown in Table 7), they all favor owners (*see* Table 10). The largest difference in the proportion of correct replies relates to highest grade of school completed by wife, 83.5 per cent of the wives of owners reporting

Table 10. Accuracy of wives' reports, by question and tenure.[1]

Accuracy	Total[2]	Owner	Renter	Total[2]	Owner	Renter	Total[2]	Owner	Renter
	Year of marriage			Years in large cities			Age of wife		
Number of Reports	1,194	507	676	1,164	493	660	1,177	503	664
Percentage:									
Correct	88.4	90.3	87.0	88.6	90.5	87.1	78.8	79.5	78.5
1 Year Too Low	2.2	1.6	2.7	1.8	1.4	2.1	7.8	8.0	7.7
2+ Years Too Low	1.1	0.6	1.3	2.1	2.2	2.1	3.1	2.4	3.5
1 Year Too High	6.4	5.7	7.1	2.1	2.4	1.7	8.4	8.7	8.1
2+ Years Too High	1.9	1.8	1.9	5.4	3.5	7.0	1.9	1.4	2.3
	Age of husband			Highest school grade, wife			Highest school grade, husband		
Number of Reports	1,172	501	661	1,177	502	665	1,168	497	661
Percentage:									
Correct	74.7	75.0	74.7	80.6	83.5	78.3	74.1	76.1	72.6
1 Year (Grade) Too Low	9.0	9.0	9.1	3.5	3.6	3.5	6.3	6.6	5.9
2+ Years (Grades) Too Low	3.1	2.8	3.3	2.0	2.0	2.1	3.6	3.4	3.5
1 Year (Grade) Too High	9.9	10.2	9.5	9.0	7.8	9.9	10.4	9.1	11.6
2+ Years (Grades) Too High	3.2	3.0	3.3	4.8	3.2	6.2	5.7	4.8	6.4

[1] See Table 2, footnote 2.
[2] Includes "unknown tenure" and cases not coded as owners or renters.

[48] These figures are based on the Survey reports for 12,139 owners and 28,031 renters (native-white couples with the wife under 45 and neither spouse married more than once).

correctly and 78.3 per cent of the wives of renters.[49] With age of husband, however, the two percentages vary by only 0.3. If the results for the six questions are combined, the average percentage correct is 82.5 per cent for owners and 79.7 for renters, but the difference of 2.8 is too small to be important.

By Rent or Rental Value of Home. Variations between rent or rental-value groups in the accuracy of replies to the questions under consideration are slightly larger than those between tenure groups, but show no consistent trend. The percentage of correct reports on age of wife and age of husband is highest in the $20-29 group, but in neither case is it as much as nine points above the lowest percentage (*see* Table 11). Highest grade of school completed by wife was reported most accurately by wives in the $30-39 group (82.6 per cent correct) and least accurately by those in the under $20 group (79.6 per cent correct), but the difference is not significant. The fewest mistakes in stating education of husband and year of marriage are found in the $60 or more group, and the most in the under $20 group, the differences in the percentage correct being 7.4 and 7.0, respectively. Finally, the $40-59 group ranks first (91.9 per cent) in reporting correctly years lived in large cities, and the under $20 group again ranks last (84.5 per cent).[50]

The nearest approach to a consistent relationship between groups is the superior accuracy of the $20-29 group compared with the under $20 group. The former outranks the latter for each of the six questions considered above. If the data for the six questions are combined, the percentage correct is 82.3 and 78.7, respectively, for the two groups, and the difference of 3.6 is too small to be of much importance.[51]

[49] This difference is moderately significant statistically but the others are not.

[50] The following differences between rental groups in the proportion of correct replies are moderately significant statistically: (a) age of wife: $20-29 and under $20 or $40-59; (b) age of husband: $20-29 and $30-39; and (c) years lived in large cities: under $20 and $40-59.

[51] In view of the tendency for errors to be concentrated in certain respondents this difference may not be significant statistically.

The relation between rent or rental value and the agreement of successive reports of this item needs to be considered by tenure, since, as mentioned earlier, the reports of owners differ decidedly more

Table 11. Accuracy of wives' reports, by question and rent or rental value of home.[1]

Accuracy	Total	Under $20	$20–29	$30–39	$40–59	$60+	Total	Under $20	$20–29	$30–39	$40–59	
	Year of marriage						Years in large cities					
Number of Reports	1,194	244	293	326	226	90	1,164	238	284	318	222	
Percentage:												
Correct	88.4	85.2	87.7	90.5	88.5	(92.2)	88.6	84.5	89.8	88.1	91.9	(
1 Year Too Low	2.2	2.9	1.0	2.5	3.1	(1.1)	1.8	2.5	1.8	1.6	0.9	(
2+ Years Too Low	1.1	2.5	1.4	0.3	—	(1.1)	2.1	3.8	1.4	2.5	1.4	(
1 Year Too High	6.4	8.2	6.8	5.5	6.2	(4.4)	2.1	1.3	2.5	2.8	1.8	
2+ Years Too High	1.9	1.2	3.1	1.2	2.2	(1.1)	5.4	8.0	4.6	5.0	4.1	(
	Age of wife						Age of husband					
Number of Reports	1,177	239	291	319	224	90	1,172	239	290	318	222	
Percentage:												
Correct	78.8	77.0	83.8	78.1	75.0	(80.0)	74.7	73.6	79.0	71.4	76.1	(
1 Year Too Low	7.8	8.4	4.8	8.8	10.3	(6.7)	9.0	9.6	8.3	10.4	6.8	(
2+ Years Too Low	3.1	2.5	3.4	3.1	3.6	(1.1)	3.1	2.1	3.8	2.8	4.1	(
1 Year Too High	8.4	8.4	6.9	8.8	9.8	(8.9)	9.9	10.9	7.2	12.3	8.6	(
2+ Years Too High	1.9	3.8	1.0	1.3	1.3	(3.3)	3.2	3.8	1.7	3.1	4.5	(
	Highest school grade, wife						Highest school grade, husband					
Number of Reports	1,177	240	290	321	223	90	1,168	239	289	318	220	
Percentage:												
Correct	80.6	79.6	79.7	82.6	79.8	(81.1)	74.1	72.4	74.0	74.5	73.2	(
1 Year Too Low	3.5	3.3	3.8	3.1	4.0	(3.3)	6.3	5.4	6.9	5.3	8.6	(
2+ Years Too Low	2.0	1.3	2.1	1.9	3.1	(2.2)	3.6	3.8	2.8	2.5	4.5	(
1 Year Too High	9.0	11.3	9.0	7.5	9.9	(6.7)	10.4	14.2	9.7	10.7	7.7	(
2+ Years Too High	4.8	4.6	5.5	5.0	3.1	(6.7)	5.7	4.2	6.6	6.9	5.9	(
	Rental value, owners						Rent paid, tenants					
Number of Reports	381	108	128	92	53		475	145	149	112	69	
Percentage:												
Agreeing Within 4.9%	38.8	31.5	41.4	(37.0)	(50.9)		73.3	70.3	77.9	74.1	(68.1	
Too Low by 5-14.9%	17.1	10.2	21.1	(21.7)	(13.2)		11.8	12.4	10.1	12.5	(13.0	
Too Low by 15-24.9%	10.0	8.3	13.3	(10.9)	(3.8)		4.8	6.2	4.7	4.5	(2.9	
Too Low by 25+%	17.1	31.5	8.6	(14.1)	(13.2)		4.4	7.6	3.4	1.8	(4.3	
Too High by 5-14.9%	10.0	10.2	7.0	(13.0)	(11.3)		3.4	1.4	2.0	4.5	(8.7	
Too High by 15+%	7.1	8.3	8.6	(3.3)	(7.5)		2.3	2.1	2.0	2.7	(2.5	

[1] Specific rental value groups are restricted to cases coded as owners and renters but totals are not so restricted. Percentages based on fewer than one hundred reports are shown in parentheses. *See also* Table 2, footnotes 2, 3, and 4.

often and in greater degree than the reports of renters, and there is an important direct relationship between rent or rental value and the proportion of owned homes. Among owners, agreements are least frequent for those whose homes have a rental value of less than $30,[52] and most frequent for those whose homes have a rental value of $60 or more. Only disagreements of 25 per cent or over, however, are much more frequent in the low than in the high rental-value group.[53] The other two rental-value groups occupy an intermediate position on the whole; nevertheless, they have a somewhat larger proportion of reports too low by 5-14.9 per cent and by 15.0-24.9 per cent.[54] Obviously there is no consistent relationship between rental value of owned homes and the accuracy of the value reported by wives, but there are indications of a slight direct relation.

Among couples renting their homes, agreement between successive reports on rent is most frequent for those in the $20-29 group and least frequent in the $40+ group, but the differences between these groups are not statistically significant. A comparison of the $20-29 group with the higher rental groups brings out a slight tendency toward an inverse relationship between rent and accuracy of reports of rent, but here again the differences are small.[55]

By Education of Wife. Variations in accuracy of reports by highest grade of school completed by wife are somewhat larger than those by tenure, or by rent or rental value of home; nevertheless, they show no consistent relation (*see* Table 12). Year of marriage

[52] Almost two-thirds of the owned homes with a rental value of less than $30 are in the $20-29 group.

[53] The difference between the groups in the percentage of replies (a) agreeing within 4.9 per cent is moderately significant statistically; and (b) too low by 25 per cent or more is very significant statistically.

[54] The following differences are of statistical significance: (1) too low by 5-14.9 per cent: under $30 and $30-39 or $40-59, moderately significant; (2) too low by 15-24.5 per cent: $30-39 and $60 or more, moderately significant; and (3) too low by 25 per cent or more: under $30 and $30-39 or $40-59, very significant.

[55] The greater frequency of reports (a) 25 per cent or more too low in the under $20 group than in the $30-39 group, and (b) 5-14.9 per cent too high in the $60 or more group than in the under $20 group, is "moderately significant" statistically.

Table 12. Accuracy of wives' reports, by question and highest grade of school completed.[1]

Accuracy	Total[2]	Grade 8	High School 1–3	High School 4	College 1–3	College 4+	Total[2]	Grade 8	High School 1–3	High School 4	College 1–3	College 4+
	Years of marriage						Years lived in large cities					
Number of Reports	1,194	221	384	416	97	75	1,164	214	375	407	95	73
Percentage:												
Correct	88.4	89.1	84.4	90.9	(91.8)	(89.3)	88.6	87.4	92.0	85.3	(87.4)	(94.5)
1 Year Too Low	2.2	2.3	2.3	2.2	(1.0)	(2.7)	1.8	2.8	0.8	2.7	—	(1.4)
2+ Years Too Low	1.1	0.5	1.8	1.0	(1.0)	—	2.1	2.8	1.3	3.2	(1.1)	—
1 Year Too High	6.4	5.9	10.2	3.6	(6.2)	(4.0)	2.1	2.3	1.6	2.2	(3.2)	(1.4)
2+ Years Too High	1.9	2.3	1.3	2.4	—	(4.0)	5.4	4.7	4.3	6.6	(8.4)	(2.7)
	Age of wife						Age of husband					
Number of Reports	1,177	217	380	410	97	72	1,172	216	378	409	97	72
Percentage:												
Correct	78.8	79.7	77.4	80.2	(79.4)	(73.6)	74.7	76.9	75.9	74.8	(71.1)	(66.7)
1 Year Too Low	7.8	5.1	8.7	8.5	(6.2)	(9.7)	9.0	6.5	9.3	9.0	(10.3)	(13.9)
2+ Years Too Low	3.1	3.7	2.4	2.7	(4.1)	(5.6)	3.1	2.3	2.6	3.4	(2.1)	(6.9)
1 Year Too High	8.4	8.8	9.7	7.1	(8.2)	(9.7)	9.9	12.5	9.0	9.0	(11.3)	(9.7)
2+ Years Too High	1.9	2.8	1.8	1.5	(2.1)	(1.4)	3.2	1.9	3.2	3.7	(5.2)	(2.8)
	Highest school grade, wife						Highest school grade, husband					
Number of Reports	1,177	219	378	411	96	73	1,168	216	375	408	96	73
Percentage:												
Correct	80.6	84.9	71.4	85.6	(84.4)	(82.2)	74.1	75.0	72.3	74.3	(72.9)	(80.8)
1 Grade Too Low	3.5	2.3	6.3	1.5	(1.0)	(6.8)	6.3	4.2	7.7	5.6	(11.5)	(1.4)
2+ Grades Too Low	2.0	5.5	2.1	1.0	—	—	3.6	4.6	2.1	4.7	(2.1)	(4.1)
1 Grade Too High	9.0	6.4	15.6	4.1	(12.5)	(5.5)	10.4	11.1	13.6	7.8	(9.4)	(8.2)
2+ Grades Too High	4.8	0.9	4.5	7.8	(2.1)	(5.5)	5.7	5.1	4.3	7.6	(4.2)	(5.5)
	Rental value, owners						Rent paid, tenants					
Number of Reports	381	54	115	140	72		475	90	175	160	50	
Percentage:												
Agreeing Within 4.9%	38.8	(46.3)	32.2	37.9	(45.8)		73.3	(70.0)	76.6	70.0	(78.0)	
Too Low by 5-14.9%	17.1	(9.3)	18.3	20.7	(13.9)		11.8	(14.4)	9.7	14.4	(6.0)	
Too Low by 15-24.9%	10.0	(3.7)	12.2	12.1	(6.9)		4.8	(7.8)	3.4	4.4	(6.0)	
Too Low by 25+%	17.1	(22.2)	17.4	14.3	(18.1)		4.4	(2.2)	4.6	5.6	(4.0)	
Too High by 5-14.9%	10.0	(11.0)	12.2	9.3	(6.9)		3.4	(1.1)	3.4	3.8	(6.0)	
Too High by 15+%	7.1	(7.4)	7.8	5.7	(8.3)		2.3	(4.4)	2.3	1.9	—	

was reported somewhat less accurately by wives with one to three years in high school than by those with more or less schooling, owing chiefly to a greater tendency to mention one year too late.[56] Somewhat larger variations are found in the reports on years lived in a large city since marriage but even so the lowest percentage correct (85.3 for the "High School 4" group) is only 9.2 below the highest percentage (94.5 for the "College 4+" group).[57] Moreover, the rank order of the groups is not the same for the two questions.

Variations in accuracy by education are smaller for reports on age of wife. For this item the "High School 4" group has the highest percentage correct (80.2) and the "College 4+" group the lowest (73.6). There may be a slight tendency, however, for accuracy of wives' reports on age of husband to vary inversely with her educational status. There is a gradual decline in the percentage correct from 76.9 for the "Grade 8" wives to 67.7 for the "College 4+" wives, chiefly because of a gradual increase in the percentage one year too low from 6.5 to 13.9, but each of the differences is too small to be significant.

Wife's education does not seem to have much influence on the accuracy of her reporting the highest grade of school she completed, except for the "High School 1-3" group.[58] These wives are well below the others (10.8 to 14.2 points) in the percentage of correct replies, but most of the extra errors are of only one grade. With respect to education of husband, in contrast, the "College 4+" group leads by

[56] The difference in the proportion of correct reports between the "High School 1-3" and "High School 4" groups is very significant statistically; that between the former and the "College 1-3" group is moderately significant. The difference in the proportion of reports of marriage one year too late between the "High School 1-3" and the "High School 4" group is very significant statistically; that between the former and the "College 4+" group is moderately significant.

[57] The following differences between groups in the percentage of correct reports of years lived in large cities are (a) very significant statistically: "High School 4" and "High School 1-3" or "College 4+"; and (b) moderately significant statistically: "Grade 8" and "College 4+."

[58] Each of the differences is very significant statistically except that between "High School School 1-3" or "College 4+," which is moderately significant.

5.8 to 8.5 in the percentage of correct reports, but the "High School 1-3" wives are only slightly below the other three groups.

The percentage of reports regarding rental value of owned homes which agree within 4.9 per cent fluctuates widely between educational groups, declining from 46.3 per cent for the "Grade 8" wives to 32.2 per cent for the "High School 1-3" wives, and then rising to 45.8 per cent for the combined "College" group. In spite of this, the frequency of large understatements (25 per cent or more) is greatest in the "Grade 8" group, and second in the "College" group. But because of the small number of wives in each group (between 54 and 140) these differences in percentages are not significant statistically. If the wives are subdivided into two groups, namely, Less Than High School 4, and High School 4 or More, the percentage of reports on rental value agreeing within 4.9 per cent is 36.7 and 40.6, respectively, and the difference is too small to be important. Tenant wives' reports on rent vary less widely and less regularly with education of wife. If only two groups are used (Less Than High School 4, and High School 4 or More) the percentages are 74.3 and 71.9, and the difference is too small to be important.

If the results for the first six questions considered in this section are combined, the percentage correct varies only from a low of 78.9 for "High School 1-3" wives to a high of 82.2 for "Grade 8" wives. If rent or value is included, the same two groups are still at the extremes, but the percentages are lowered to 76.5 and 80.0, respectively.[59] It is clear, therefore, that among wives completing at least the eighth grade, the variations between education groups in accuracy of replies in the Survey follow no regular pattern and are generally of small consequence. This finding is in agreement with Palmer's broader conclusion based upon the Philadelphia surveys, namely, "there was no consistent relationship between variability of response and a worker's . . . education . . ."[60]

[59] In view of the tendency for errors to be concentrated in certain respondents, these differences may not be significant statistically.

[60] *Op. cit.*, p. 150.

Summary and Conclusions

In the Household Survey of Indianapolis, as in the Federal Census of Population and Housing, and many other studies, a limited number of relatively simple questions were asked of some person in the household. Since it is difficult in most of these cases to check the completeness of coverage, and the accuracy of the information gathered, it is hoped that an analysis of these matters for the Survey may have broader implications.

A block-by-block comparison of the number of dwelling units in the 4,219 blocks covered by both the Survey and the Census of Housing, and a recheck of most of the 208 blocks with no colored residents for which the two counts differ by ten or more dwelling units, indicate that the completeness of coverage of the Survey is approximately 99.5 per cent.

The accuracy of the information gathered from 1,545 couples in the Survey can be tested by comparing it with that gathered a few weeks later in the intensive Study of Social and Psychological Factors Affecting Fertility. The restriction of the Study to couples meeting certain requirements as to age, education, religious preference, number of times married, year of marriage, and length of residence in large cities eliminates the possibility of finding certain types of errors concerning these items but should have little influence on the percentage of correct replies to most of the questions under consideration. Because of the slight relation found between accuracy of information about a couple and the number of live births to that couple, it is not necessary to adjust for the sampling by parity which was done in the Study.

According to the Indianapolis Survey, reports on the number of wife's children living, whether the husband or wife was married previously, and his or her religious preference (by broad religious groups) can be obtained with a high degree of accuracy (98 per cent or better), and nearly as well from a neighbor as from the wife

or husband. With such questions the correct answer usually is obvious, or one category is so large that a respondent who does not know will guess correctly in most cases. Nearly as high a degree of accuracy (95 per cent or better) can be obtained in reports on number of live births to wife, and state of birth of wife and husband, but with the last two questions the frequency of error is substantially greater for "other" respondents than for wives, husbands, or relatives in the home.

Data on such matters as year of marriage, years lived since marriage in cities of 25,000 or more, age of wife and husband, highest school grade completed by wife and husband, and rent paid for a rented dwelling unit are less satisfactory (70.4 to 88.0 per cent correct in the Indianapolis Survey). These questions should be asked of wives if possible and not of neighbors, for a large majority (as high as 80 per cent) of the latter may give erroneous information on one or more such questions, and an important proportion of the errors may be large. With a question like monthly rental value of an owned home, which usually is a matter of opinion rather than of fact, a large majority of wives (61.2 per cent in this case) may give a report in a survey which *differs* by at least 5 per cent from their more considered report in an intensive study.

Wives report their own age about as accurately as that of their husbands, and with overstatements about as numerous as understatements. There is a strong tendency in this Survey (much stronger than in the Census) to report age as a round number, beginning between ages 20 and 25 and increasing somewhat thereafter. Incorrect reports of age also increases somewhat as age increases, in part because of the foregoing relationship.

There is a strong upward bias in the reports by wives and husbands on highest grade of school completed, overstatements outnumbering understatements by more than two to one.

Errors tend to be concentrated in certain individuals within a given group of respondents (wives in this case). Thus, as between

wives who answer a given question correctly and those who answer it incorrectly, the latter are more likely to answer other questions incorrectly.

Wives of home owners probably give somewhat more accurate information than wives of renters. The difference in the frequency of errors in this Survey are not large, but are consistently in favor of the owners for all questions except rent or rental value of home (which is a stipulated amount for renters but usually a matter of opinion for owners).

Variations between rent or rental value groups in the accuracy of wives' replies are slightly larger than between tenure groups, but show no consistent relationship except a possible tendency for errors to be most frequent in the under $20 group. Variations between educational groups are still larger, but are even more erratic.

The Survey carried out its primary function (to locate couples for the Study) with a fair degree of success. Among the 1,545 couples whose apparent eligibility was tested in the Study, 223 (14.4 per cent) were found to be ineligible, leaving 1,322 couples actually eligible. On the basis of estimates described in the Appendix, it appears probable that this group would be increased by 96 to 114 (7.3 to 8.6 per cent) if it included couples actually eligible but appearing ineligible because of errors in the Survey data.

Appendix

Relation of Errors in the Survey to Eligibility of Couples for the Study

As indicated at the outset of this paper the primary purpose of the Survey was to locate couples meeting the requirements for the Study. If the information obtained in the Survey was incorrect in sufficient degree some of the couples who appeared to be eligible were ineligible, and some who appeared to be ineligible were eligible. It is important to consider the size of these two groups.

Among the 1,545 couples who answered most or all of the questions on

the first schedule (Form A) of the Study, all of whom were classified as eligible according to the Survey schedules, 224 were found to be ineligible because some of the entries on the latter were wrong. An incorrect report of year of marriage caused the misclassification of 86 of these couples, more than twice as many as an incorrect report on any other item (*see* Appendix Table 1). Next in frequency are the exaggerated reports of education of husband (41 couples), followed in order by misstatements regarding length of residence in large cities, education of wife, and previous marriage of husband or wife. Each of the latter caused the misclassification of 25 to 32 couples. If this ranking is compared with that based on the frequency of errors of all types (including those which did not cause misclassification as to eligibility) certain differences are striking. Thus, age of husband is tenth on the former but first on the latter, while year of marriage is first and fifth, respectively. At the other extreme, education of husband ranks second and education of

Appendix Table 1. Errors on Survey schedules which affected classification as to eligibility for Study, by question, and by number of errors per schedule.

Question	Couples Apparently Eligible but Actually Ineligible Because of: [1]		Couples Apparently Ineligible but Actually Eligible Because of: [2]	
	One Error	Two or More Errors[3]	One Error	Two or More Errors
Total for Questions Considered	183	89	87–101	20–29
Age at Marriage, Husband	2	1	2–3	2–2
Age at Marriage, Wife	10	6	2–3	2–3
Country of Birth of Wife and/or Husband	2	0	0–1	0
Highest School Grade, Husband	26	15	1–2	0–1
Highest School Grade, Wife	16	12	0–1	0–1
Previous Marriage of Husband	12	14	0–1	0–1
Previous Marriage of Wife	12	13	0–1	0–1
Religious Preference of Husband	3	6	0–1	1–2
Religious Preference of Wife	0	4	0	0–1
Year of Marriage	72	14	80–85	15–16
Years Lived in Large Cities	28	4	2–3	0–1

[1] If the Form A for 41 of these couples had been completed instead of being stopped when (or soon after) one or more reasons for misclassification as to eligibility had been discovered, it is probable that the numbers in the "one error" column would be somewhat smaller and that these reductions would be more than doubled by increases in the "two or more errors" column.

[2] Estimated from the columns to the left and the data referred to in the text.

[3] Two errors affecting eligibility were found on the Survey schedules of 35 couples, three on those of five couples, and four on that of one couple.

wife fourth on each list. The primary reason for such differences is the fact that an error of one year in reporting age will affect the eligibility of few couples, since a large majority of wives and husbands marry several years before the limits established (ages 30 and 40, respectively). In contrast, an error of one year in reporting year of marriage will affect the eligibility of approximately 40 per cent of the couples actually married between January 1, 1926 and December 31, 1930.

The number of couples who actually were eligible but who appeared to be ineligible because of errors on the Survey schedules cannot be determined definitely, but can be estimated from the foregoing list, the frequency of various types of errors as shown in Tables 3, 5, and 6, and other available facts. Because the ratio of Protestant to non-Protestant wives and husbands in the age groups concerned is over five to one in Indianapolis, and because only 1.2 per cent of the persons reported as Protestant (or as "none") were found to be Catholic, Jewish or "other," it is probable that not more than two or three couples were misclassified as ineligible because the question on religion was not answered correctly in the Survey. Still fewer native couples are believed to have been reported as foreign born in the Survey.

Errors in reporting whether previously married should result primarily from omitting a previous marriage rather than reporting a nonexistent marriage. Because of this probability, because wives and husbands married only once outnumbered those married more than once by at least eight to one, and because only 1.6 per cent of the reports of no previous marriage were incorrect, it is believed that only two or three couples with wife and/or husband reported as married more than once actually were eligible.

As stated earlier, a large majority of the otherwise eligible couples reported more than eight years' residence (since marriage) in cities of 25,000 or more, and were correct in doing so. Among the 12.0 per cent whose reports were wrong, overstatements exceeded understatements by over two to one. Consequently it would be expected that only three or four couples who appeared ineligible because they were reported as living less than eight years in large cities actually had lived in them longer and were eligible.

Among the once-married Protestant couples in the Survey who married during 1927-1929, 98.6 per cent of the wives were under 30 years of age, and 99.5 per cent of the husbands were under 40 at marriage. The few who were older at marriage had reached at least ages 41 and 51, respectively, at the time of the Survey. Judging from the data in Table 5 there is a strong tendency (three to one) for a wife's age to be understated if she is 40-44, and a moderate

tendency (three to two) for a husband's age to be overstated if he is 45-52. Only fifteen couples were misclassified as eligible because wife's age at marriage was understated, and three because of a similar error for husbands. It would be expected, therefore, that four to six couples were misclassified as ineligible because the wife's age was overstated, and four or five couples because the husband's age was overstated, the former appearing to be over 30 and the latter over 40 at marriage.

Approximately 93 per cent of the wives and 92 per cent of the husbands in the age groups concerned were reported in the Survey as having completed at least the eighth grade. According to Table 6, these reports were incorrect for 23.2 per cent of the former and 28.2 of the latter, with overstatements of education outnumbering understatements by over two to one for wives, and nearly seven to four for husbands. An equally strong tendency to overstate education would be expected among those with less schooling. It is probable, therefore, that not more than two couples were misclassified as ineligible because the wife's education was misstated as less than eighth grade, and not more than three because of a similar misstatement for the husband.

The effect of misstatement of year of marriage remains to be considered. Important here are (a) the absence of a tendency to report a year ending in one digit (zero or five) rather than another (one or nine) as occurs with age; (b) a moderate tendency (five to two) to postdate rather than antedate year of marriage; and (c) a larger number of marriages in Marion County, Indiana[1] during 1927-29 (11,865) than during 1924-26 (11,718) or 1930-32 (9,959). The net result of these factors is that for every seven couples erroneously classified as eligible there should be eight erroneously classified as ineligible. In other words, it is probable that approximately 95 to 101 couples reported as married before 1927 or after 1929 and classified as ineligible, actually were married during 1927-29 and were eligible.

If the above estimates are combined and if allowance is made for two or more errors occurring for some couples, it appears that between 96 and 114 couples actually eligible for the Study were classified as ineligible. This is only 7.3 to 8.6 per cent of the couples whose eligibility was verified in the Study. It may be concluded, therefore, that the Survey was fairly satisfactory from the standpoint of its primary function, the locating of couples for the Study.

[1] The published reports of number of marriages by counties in Indiana do not distinguish between residents of the county seat and those of the remainder of the county.