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Hindsight and Foresight: The Census of the Philippines, 1948 and 1960

FRANCIS C. MADIGAN

THE time for the planning of the next census of the Philippines is rapidly approaching. Subject to the necessary legislative approval, the Bureau of the Census and Statistics intends to take this census in the year 1960, on either January 1st or July 1st.¹

Census taking is a very important activity in the life of a modern nation. Policy formulation, legislation and many administrative decisions of the national and provincial governments require accurate population data. This is particularly true in a democracy such as the Philippines, where representation in government is based upon the magnitude of a locality's population. Such data can be known accurately only through a well-executed census. For example, the 1948 Census tells us that there were approximately 5.4 per cent less people in Aparri, Cagayan, than this municipality had possessed in

¹ The virtue of choosing this year lies in the comparisons it will afford between Filipino data and foreign data. Many of the United Nations countries have agreed to take their censuses during this year. As for the days, the July date would be better from a purely statistical point of view, since it divides the year. However, from the standpoint of practicability, the January date is better and can be expected to yield more accurate data, since it lies outside the rainy season with its typhoons and also outside the hot season.

1939,² while it also states that the population of Manila increased by 57.8 per cent during the same period. The Mountain Province, it indicates, lost 6.3 per cent of its inhabitants while Misamis Oriental gained 72.9 per cent persons.³ Such information, if accurate, is extremely important.

However, the urgent need for accurate census statistics is not limited to such more central functions of the government. The national health is also involved. Public health officials need to know as accurately as possible the totals and the composition of the national population as they existed at the last census date. This permits them by extrapolation methods to estimate population bases for each year since the census, to which they relate registered births and deaths for the appropriate year. Thus annual national vital statistical rates can be computed. Where data from both the registration system and the census are reliable, the vital statistics death rates and birth rates can be narrowed to specific five-year or ten-year age groups. Specific rates such as these provide a splendid yearly barometer of the health of the nation, and are essential in directing effective remedial action in the campaigns against danger spots in the health problem areas.

Business and commercial leaders also require valid population data as a basis for long-range plans. Such data point out the whereabouts of potential markets, make possible the projection of population trends over several decades, and show where labor forces are available, thus making the matter of plant location or of plant expansion one of scientific planning rather than of guess work.

To enumerate the host of other important activities which depend upon accurate census data would be tedious. A few illustrations will suffice. Educators with accurate census data at hand can estimate on a sound basis the amount of class-

² Bureau of the Census and Statistics *Census of the Philippines: 1948. Population. Vol. I Report by Provinces Part 2* (Manila, Bureau of Printing, 1954) p. 1389 Table 2.

³ *Ibid*, Vol. III *Summary of Population and Agriculture Part I* (Manila, Bureau of Printing, 1954) p. 12 Table 4.

room space and the number of teachers who will be necessary throughout the nation in five to seven years to provide education for the present infants. The churches too are enabled to plan a program of building or of consolidation in accordance with the foreseen expansion or contraction of their numbers through births and migration. Cities can calculate the need for new roads to handle the foreseen amount of traffic adequately, to provide sufficient hospital beds for a population as large as they will have in ten or fifteen years and to plan an expansion of public utilities—light, transportation and water—to cope with the needs of such a population.

COOPERATION OF HOUSEHOLD HEADS REQUIRED

From the foregoing, the reasons for the careful planning and execution of the 1960 census should be clear. However, unless the average household head cooperates wholeheartedly with the census enumerators when they come to his door, despite the most careful designing and execution, the census will have little value. If the average householder gives inaccurate answers to the enumerator's questions, the basic data of the census will be biased from the very start. Although a good census editor may be able to catch and correct the more glaring contradictions, the rest will slip by and the resulting census as a whole can be no better than its individual parts. Why is the average citizen often remiss in accurately informing the census-taker? The two main reasons are fear and negligence. Less well educated persons are often apprehensive lest if they give correct information, this may somehow be used against them either by revenue collectors or by other governmental officials.

Enlightened persons should endeavor to combat such fears and possible indifference to the 1960 census among their less well informed acquaintances and point out the fact that all information given in the census is strictly confidential and cannot be used in court. Since the cost of the census must be borne by the individual taxpayer, the well informed might advisedly also point out that it is a matter of common sense to strive to get the best results possible for the country for the money spent.

LEGISLATIVE SUPPORT

Enlightened citizens will also support the Bureau of the Census and Statistics in its attempts to get an adequate appropriation for the needs of the 1960 census. Should legislators trim needed pesos from this budget request, it will be short-sighted economy indeed. An inadequate budget severely hampered the tabulation and publication of the 1948 census.⁴ The experience gained by the bureau in that census now makes it possible to submit a very realistic estimate of the time and money costs for the 1960 undertaking. This budget should be granted to the bureau in its entirety.

EVALUATION OF THE 1948 CENSUS

As the time approaches when census planning for the 1960 census will begin, a question of considerable interest poses itself. How accurate was the 1948 census? How well did this census enumerate the population and describe its characteristics? What suggestions does it furnish for improvements in the 1960 census?

In attempting to shed some light on these questions, this paper will limit itself to the population part of the last census. However, what is said of that part will in general be true of the agricultural part also. For the agricultural and population schedules were filled out by the enumerator on the same trip to each household interviewed.

The writer has spent considerable time in the United States as well as in this country in discussing the quality of the 1948 Philippine census with census and population experts. There is little agreement in their evaluation. Some think the census was rather bad, others that it was reasonably

⁴ The original appropriation was supplemented by a second. However, the total sum was insufficient to allow the printing of many valuable tables. Moreover, through lack of funds the publication of the census reports themselves has been seriously abbreviated. Of the planned population reports, a summary for the Philippines as a whole was published, but reports by provinces were published only for the first sixteen provinces (alphabetically); those for the other thirty-five provinces and Manila will probably never be published since the next census is now so near at hand.

good for the circumstances under which it was taken. Some believe that it under-enumerated the population, others that it over-enumerated them. One point of general agreement however is that the census is not completely reliable because of the inclusion of some rather questionable data.

These questionable data, they believe, include the following: substitution at times of estimates of populations in place of enumerations; enumeration of the same persons more than once; mistakes in filling out the schedules made by numerous census-takers who had been given only three days of training to master the intricacies of gathering census data; finally, inaccurate data furnished by respondents because of fear of the census, impatience with it or positive hostility, or because of poor records coupled with bad memories.

Such questionable data are understandable because they were a result—at least partially—of the year in which the census was taken. In 1948 the Huks were very strong and almost in control in certain areas of the country. People in these areas feared reprisals from the Huks for cooperating with the government even in giving census data. On their part, enumerators—who were mostly women school teachers—were sometimes afraid to go into certain barrios and municipalities controlled by the Huks and preferred instead to make estimates of the populations concerned. In some places large segments of the population had fled to large cities or to other municipalities to avoid the Huks. As for the Huks themselves, they obviously had little sympathy with the census. In all this turmoil and confusion, the average respondent may have felt the census to be an insignificant affair in view of the possibly imminent overthrow of his society. In addition the people were still restless and confused from the shock of World War II during which a multitude of their homes, churches and public buildings had been destroyed. Many had not been rebuilt. Finally, the census was taken during the stormy typhoon season, not an ideal time for arousing either respondent good will or enumerator enthusiasm.

Most experts believe that the quality of the census data is uneven. They think it quite good for some provinces and

cities. But for other areas they judge it less satisfactory. Therefore in evaluating the census reports for the country as a whole, their judgments vary, depending upon the quantity of questionable material they believe was included, especially the volume and quality of the estimates which were substituted for actual enumerations.

HAWLEY'S ANALYSIS

The most detailed analysis yet published of this census remains that of Amos Hawley.⁵ He concludes that the total enumeration for the Philippines was in excess of the number actually existing in 1948, perhaps by as much as 1.3 million persons.⁶ Consideration of the reasons which led Hawley to this conclusion will help the reader to make his own evaluation.

The average annual natural increase in population between the 16,000,303 persons enumerated in 1939 (which census Hawley accepts as reliable and as an accurate base of comparison) and the 19,234,182 persons enumerated in 1948 would be 2.07 per cent. Feeling that such an increase is improbably high for the war decade, Hawley begins his examination with an analysis of the internal consistency of the 1948 census. First he calls attention to the sex ratios⁷ manifested by the age groups of the census.

These ratios he finds rather implausible, particularly those for the population as a whole as well as those for ages 55-69. The latter ratios make him suspect either a considerable under-enumeration of women between ages 55 and 69 or an over-enumeration of men of the same ages, or both. This leads him to doubt the reliability of figures for the remaining ages as well as for the total.

⁵ Amos N. Hawley "The Philippine Census of 1948" in *Papers in Demography and Public Administration* (Manila, Institute of Public Administration of the University of the Philippines, 1954) pp. 11-26.

⁶ *Ibid.* p. 26.

⁷ The sex ratio is the number of males per 100 females. See Table 1.

Table 1. Sex Ratios for the Philippine Islands
1939 and 1948.*

Age	Sex Ratio, 1939	Sex Ratio, 1948
Total	101.6	99.8
0—4	104.4	106.0
5—9	105.2	106.1
10—14	105.1	105.3
15—19	93.4	94.2
20—24	99.4	93.7
25—29	96.7	92.0
30—34	98.2	94.7
35—39	105.5	101.3
40—44	98.3	98.4
45—49	112.3	110.3
50—54	93.3	91.3
55—59	107.1	107.0
60—64	109.8	103.1
65—69	118.3	111.9
70—74	93.2	98.3
75—79	96.6	111.4
80—84	80.3	88.9
85—89	84.2	103.4
90 and above	78.7	88.1

* Source: Censuses of the Philippines 1939 and 1948.

After examining the sex ratios set forth in Table 1, the writer is inclined to question Hawley's interpretation. First of all, the 1939 census, which Hawley himself accepts as the most reliable census of the Philippines, exhibits a greater preponderance of males at ages 45-69 than does the 1948 census, as it also does for the totals. While it is true that in countries where population growth results almost exclusively from natural increase, the sex ratios for age groups above age 45 and for the population as a whole should theoretically exhibit less males than females, there are other explanations at hand besides faulty enumeration for the fluctuations in the 1948 census.

In the United States where the censuses are accepted as being reliable enumerations (error estimated at not more than

2 per cent) fluctuations of the sex ratios are also generally found. For instance in the American census for 1930, sex ratios similar to those of the Filipino censuses of 1939 and 1948 are found in the age groups 35-69 years of age. Even higher ratios appear for these groups in the enumerations of Negroes for the years 1910, 1930 and 1940, although there has been no significant Negro immigration since the end of the Civil War. Census experts generally attribute these fluctuations, after the effects of immigration have been eliminated, to a proneness of American women to understate their age, rather than to any sizeable errors in enumeration. That this seems to be a general female tendency found in many other cultures is observable in the very high sex ratios for these same ages found in the Egyptian census of 1927, the Australian census of 1921, the Finnish census of 1929, the Hungarian census of 1920, and the Swedish census of 1920.⁸ Since the Philippines has been greatly affected by western culture through contacts with Spain and the United States, it is not unlikely that our women also tend to understate their ages. Thus, much of the observed fluctuations in sex ratios may be due to such feminine aberrations. Further, in view of the Chinese male immigrations before the war, and probably after the war, too, the totals do not seem to the writer to reflect an unreasonable sex ratio.

Age reporting in censuses usually shows a bias toward certain numbers, generally those divisible by five, and to a smaller degree those divisible by two. Hawley examines the bias observed from this source in the censuses of 1939 and 1948 and finds a deterioration in the latter census of 2.68 from the 17.62 standing of the 1939 census as measured by the index of preference method.⁹ These Filipino censuses exhibit a

⁸ T. Lynn Smith and Homer L. Hitt "The Misstatement of Women's Ages and the Vital Indexes" *Metron* XIII (1939) 100.

⁹ This method measures the quantity of age bias by expressing the number reported at each year of age as a per cent of the total population. Each year should approximate 10 per cent. The absolute deviations from 10.00 per cent are added to compute the index score. The index of preference score for the United States population census of 1950 was about 5.

bias towards ages ending in 2 and 8 as well as towards those divisible by five.

Hawley next compares totals for each five-year age group in the 1939 and 1948 Censuses. Subtraction of the 1948 totals of the age groups 9-3/4 years older from totals of the 1939 age groups gives the amount of mortality between censuses (providing the effects of net immigration are assumed to have been negligible). The mortality figures thus derived for the age groups 0-4 and 10-14 (in terms of 1939 ages) are implausibly low, while females in the 10-14 age group (aged approximately 20-24 in 1948) show 41,036 more survivors in 1948 than they possessed members in 1939. The latter result, of course, would have been impossible if both 1939 and 1948 censuses had been perfectly accurate, and if immigration had been relatively small.

The question must be raised as to the causes of these biases in reporting. Were they due to under-enumeration in 1939, to over-enumeration in 1948, or to misstatement of age?

For the group aged 0-4 in 1939, some under-enumeration in 1939 seems likely. Under-enumeration of this age group is an important source of error which is typical of censuses in general.¹⁰ Beyond doubt, misstatement of age is also present to some degree in 1948 so that children actually only 8 or 9 years of age were stated in round numbers to be 10 years old. Additional pressure in this direction is caused by the fact that parents in the Philippines often send their children to work when they are 10 years of age. The number of non-existent persons counted in this age group (over-enumeration) in 1948 therefore remains problematical.

The group aged 10-14 in 1939 (20-24 in 1948) was most probably enumerated with good accuracy in 1939. Thus its startling mortality record (only 16,700 deaths in 1,785,000 persons) and the positive gain of female survivors, must be

¹⁰ Daniel O. Price "A Check on Under-enumeration in the 1940 Census" *American Sociological Review* XII (Feb. 1947) 44; R. J. Myers "Under-enumeration in the Census as Indicated by Selective Service Data" *American Sociological Review* XIII (June 1948) 320.

based on either over-enumeration in 1948 or on the inclusion in the 20-24 group in 1948 of a large number of ladies who considerably underestimated their age. The latter possibility is so probable that in the writer's judgment it far outweighs its alternative.

Hawley also emphasizes discrepancies noticed in mortality (and survivors) for the groups aged 70 and above. In view of the high percentage of illiteracy found among these older people, however, it seems that even under the best of census enumeration conditions statement of age by such people would reflect a large amount of error. This would be compounded by the fact that records of birth were not kept as carefully seventy years ago as they are today. Probably no valid test of the accuracy of the census as a whole can be drawn from these ages; they rather seem to represent an inevitable source of bias which will only diminish with the advance of literacy.

Hawley's analysis of the internal consistency of the 1948 census concludes with an examination of the percentage increases for totals in age groups of the 1948 Census compared with totals for the same age groups in the 1939 census.¹¹ He believes that the 10-14 increase of 43.45 per cent shown in Table 2 almost certainly reflects over-enumeration in 1948. The writer concurs, since it is difficult to see any other reason for so anomalous a percentage gain over the 1939 figure.

Hawley also sees evidence of enumeration errors in the large percentage increases for the age groups between ages 30-49, because precisely these persons had suffered an excess of actual deaths over expected deaths during the intercensal period—an excess mortality of almost 600,000 persons. Yet, comparison of 1939 age groups with those of 1948 seems to show that these gains are plausible; in 1939 the age groups $9\frac{3}{4}$ years younger were considerably larger than the groups questioned in 1948. This makes possible a large excess male mortality in these age groups during the intercensal period while

¹¹ Survivors of an age group are not here compared with the original number $9\frac{1}{4}$ years earlier in 1939. Rather different persons are compared, e.g. those in the age group 0-4 in 1939 are compared with those in the age group 0-4 in 1948.

Table 2. Per Cent Increase in Population by Age and Sex, the Philippines, 1939 to 1948.

Age Group	Males	Females	Total
All Ages	18.55	20.77	20.19
0—4	15.80	14.05	14.94
5—9	18.46	17.44	17.96
10—14	43.60	43.30	43.45
15—19	25.14	24.04	24.57
20—24	12.56	19.38	15.98
25—29	8.36	13.90	11.18
30—34	19.97	24.45	22.23
35—39	27.35	32.64	29.92
40—44	24.56	24.46	24.50
45—49	20.43	22.56	21.44
50—54	3.99	6.20	5.13
55—59	9.03	9.22	9.12
60—64	-7.03	-1.34	-4.46
65—69	-0.50	5.77	2.10
70—74	15.87	9.82	12.74
75—79	31.74	14.19	22.81
80—84	19.44	7.98	13.09
85—89	27.74	3.99	14.85
90 and above	9.52	-2.20	2.96

Source: Hawley *op. cit.* p. 19.

nevertheless leaving a larger total remaining number in 1948 than there had been in the same age group in 1939.

Hawley concludes that the observed inconsistencies raise serious doubts (1) about the reporting of population characteristics in 1948, and (2) about the enumeration of the total population. The present writer on the other hand does not feel that the evidence advanced in regard to the population characteristics warrants so strong a conclusion. The percentage increase in totals for the age group 10-14 in 1948 does appear to show large error for this age group. But the remaining supposed inconsistencies may be explicable on grounds other than faulty census reporting, as was noted above.

In regard to enumeration of the total population in 1948, Hawley develops two additional checks as tests of possible error. The first is drawn from the vital statistics registration system for 1948. However, this check proves inconclusive, since the completeness of registration of births and deaths in 1948 is an unknown factor.¹²

The other test is an estimate of the October 1948 population based on a projection of average births and deaths for the years 1939 and 1940 over the entire intercensal period, 1939-1948.

The assumptions made are that there was no significant immigration or emigration, that the average births and deaths for these two years remained constant,¹³ and that only 70 per cent of the actual births and only 86 per cent of the actual deaths were registered in the years 1939-1940.¹⁴

The average number of births registered during the years 1939-1940 was 528,774, while the average number of registered deaths was 273,310. If births were under-registered by 30 per cent in those years, the actual number of births would have been 755,391¹⁵ while the deaths, if under-registered by 14 per cent, would have been 317,802.

Assuming that this number of births and of deaths remained constant during the 9¼ year intercensal period, we

¹² Dr. J. J. Dizon, chief of the epidemiology and vital statistics section of the Philippine Bureau of Health, recently (I believe during 1956) made a complete check of birth and death registration in Nueva Ecija—one of the best registration provinces. He told the writer that his findings showed not more than 90 per cent of the deaths in this province were registered and not more than 70 per cent of the births. The writer looks forward to the publication of this interesting and invaluable study.

¹³ Allowance is later made for the excess deaths during the war years, and the excess or deficit of births.

¹⁴ This estimate of under-registration in 1939 was made by Dr. T. J. Jaramilla in the *The Journal of Philippine Statistics* I, 3 (1941).

¹⁵ Mr. Frank S. Morrison of the health and sanitation division of ICA, has called the writer's attention to a computing error in Dr. Hawley's figures here. The total given by Hawley is 629,493 of which the registered figure would only be approximately 84 per cent, rather than 70 per cent.

multiply both corrected births and corrected deaths by $9\frac{3}{4}$. The results for the period, rounded to the nearest thousand, are 7,365,000 births and 3,099,000 deaths. Subtraction of deaths from births shows the intercensal natural increase which is added to the total population enumerated in 1939. Thus we reach a first estimate of the October 1948 population, 20,267,000.¹⁶

Two corrections must be made in the preceding figure. First, actual deaths were in excess of those expected by about 974,000; secondly, expected births were in excess of actual births by approximately 586,000 persons.¹⁷ Both these sums should be subtracted from the first estimate, which leaves a final estimate of 18,707,000 persons.

Table 3. Estimate of 1948 Population by the Natural Increase Method

1939 population		16,000,303
Estimated births, 1939-48	7,365,062	
Estimated deaths, 1939-48	3,098,570	
Natural increase, 1939-48	4,266,492	4,266,492
Expected population, 1948, first estimate		20,266,795
Excess deaths in 1939 population		—974,000
Deficit of births in 1939 population		—586,000
Corrected estimate of 1948 population		18,707,000
(rounded to nearest thousand)		
Enumerated Population, 1948		19,234,182

¹⁶ Hawley's first estimate, partly based on the above computing error, is 19,039,290.

¹⁷ On the other hand, Hawley found the actual births in excess of expected births by 476,000 persons. Here again his figure seems based on the incorrect total of 629,493 average annual births rather than on 755,391 births. Expected births were found by assuming a negligible net immigration, and by applying 1940 age-specific survivors' rates to the adjusted 1939-1940 average births in order to estimate the 1948 population 0-9 $\frac{3}{4}$ years of age. The expected population was 6,370,800, whereas the actual 1948 population was 5,784,978. Expected deaths were found by applying 1940 age-specific mortality rates to the age groups of the 1939 population and by thus aging this population through the intercensal period.

This estimate of the 1948 population compares fairly well with that enumerated in the census, the difference being one of 527,000 persons. The census figure is 2.8 per cent larger than the estimate. If this had been a rigorous and searching test of the census' accuracy in regard to the total enumerated, the result would have found this enumeration satisfactory. An error from all sources of only 2.8 per cent is good accuracy—one of 97.2 per cent. However, in view of the rather shaky assumptions on which the test was based—the continuance of the 1939-40 average number of births and deaths, that death registration in 1939 and 1940 was 86 per cent complete and birth registration 70 per cent complete, the complete accuracy of the 1939 census and the negligibility of net immigration—it must be admitted that the census error may be larger or smaller. Nevertheless, in so far as this test could probe, the 1948 total enumeration was fairly well corroborated.

A SECOND TEST

The writer suggests a second test of the census enumeration in addition to the one made by Hawley. It is based upon the estimate of total population for May 1956 recently published by the Philippine Statistical Survey of Households.¹⁸ Excluding the institutional and the "floating" populations this estimate confined itself to the total of persons living in households.¹⁹ This total was estimated at 21,590,700 persons with a coefficient of variability of 3.5 per cent.

This sample survey was especially well designed and well executed, so that in the judgment of the writer its results may be accepted with confidence within the limits of its standard error.

Independently, the Bureau of the Census and Statistics has made population projections on the basis of extrapolation

¹⁸ "Demographic and Socio-Economic Data" *Philippine Statistical Survey of Households Bulletin* (Series 2 Vol. I April 1957) 3.

¹⁹ "The Population estimate...refers only to...persons found in households, and excludes the population found in diplomatic and consular residences, ships, asylums, hospitals, penitentiaries, army barracks, hotels and similar institutions." *Ibid.* p. 2. The floating population would be travellers and migrants wandering about in search of jobs.

from the 1948 census totals, employing survivors' rates from the 1948 Life Tables (unpublished). These tables were developed from the population bases of the census and the registered births and deaths of 1948 and the adjoining years. These survivors' rates undoubtedly underestimate mortality since they rest on an assuredly incomplete registration of deaths. Nevertheless, they offer some basis for evaluating the 1948 total enumeration.

The population estimated for 1 July 1956 by the census bureau was 22,265,300 persons. When this figure is interpolated backwards to 31 May 1956 (the mid-date of the Household Survey), it becomes 22,230,600.

By adding 40,000 persons to represent the armed forces living in barracks, 25,000 for the inhabitants of prisons, hospitals, asylums, and charitable institutions, and 35,000 to represent the floating population, the Household Survey estimate is increased to 21,690,700. This leaves a difference of 539,900 persons, because of which the census estimate is about 2.6 per cent larger than the Survey estimate.

Although this figure coincides rather closely with the percentage of difference found in the preceding test, it is highly probable that the census estimate should be smaller since mortality rates in the 1948 Life Tables are probably too low. Moreover, the coefficient of variability of the Survey is 3.5 per cent, which yields a standard error in the neighborhood of 756,000 persons;²⁰ with this standard error, such differences as that found between the two estimates would be expected on the basis of pure chance about once in every two samples. From both points of view then the Household Survey supports the 1948 total enumeration as being accurate in so far as the Survey estimate can measure this.

²⁰ The coefficient of variability is the ratio between the standard error and the estimate, expressed in percentage terms. Thus, 3.5 per

cent = $\frac{X}{21,590,700} = 755,674$ (standard error).

CONCLUSIONS

What can be said, then, in evaluation of the 1948 census? First, there was undoubtedly some estimating of local populations in place of enumeration, and this had its effect on the reliability of census totals as well as of population characteristics. The population characteristics are not, however, proven notably unreliable on the basis of the tests made above, although certain aspects of these tests raise questions about the degree of their reliability, particularly the percentage increase of the age group 10-14 in the 1948 census. On the other hand, the view that the total enumeration of population is fairly reliable has not been disproven by the two tests made upon this total.

In conclusion, the writer judges on the basis of the evidence presently available that the opinion of those who hold the results of the 1948 census to be "fairly good" is more likely true than are the other opinions. In general, the total enumeration seems to be reasonably accurate, while the population characteristics presented appear less reliable.

SUGGESTIONS FOR THE 1960 CENSUS

A proposal which arises out of the experience of the 1948 census is that Congress put the census on a permanent decennial (or other) basis and that it simultaneously make provision that the Bureau of the Census be automatically granted the necessary funds to carry out these censuses adequately. This would deliver the bureau from the necessity of getting enabling legislation as each proposed census date approaches, and would eliminate uncertainty and confusion in the planning of the censuses, which would benefit not only the 1960 but all subsequent censuses.

Secondly, it would be advisable to make use of quality checks upon the work of each enumerator in the 1960 census, or at least upon the work of a random sample of enumerators—with loss of pay or of position as a penalty for poor work. Otherwise, enumerators who also participated in the 1948 census where they may at times have had to estimate rather than enumerate will be tempted to carry over this easy me-

thod of obtaining data into the work of the 1960 census. A previously publicized quality check, with the threat of financial and perhaps even penal sanctions, should obviate this danger to the reliability of the 1960 census.

Thirdly a census date in January or February seems preferable to one in July or October because of dangers related both to enumeration of the data and to its storage in the barrios when gathered. A violent typhoon could arise during the period of field work at the latter dates.

Fourthly, in the 1948 census the term "family" was used to designate all those living together in the same place—whether these were blood relatives, in-laws, boarders, servants or employees. This definition became confused when a householder's married son or daughter and children also lived with him. In this case, family no longer meant all those living under the same roof, but two "families" were distinguished—leading to ambiguities which were further complicated by such problems as to which "family" did this or that servant belong. It seems desirable to substitute the word "household" to designate all those living together under the same roof, and to reserve the term "family" for reference to the "nuclear family" only, that is, the family made up of parents and children. Thus in the above case one household and two families would be distinguished.

It would be very advantageous in cross-tabulations which relate various population characteristics to "family," to employ "family" in this latter sense. What genuine information does a tabulation by province or municipality of "families" in the first sense really convey, when we do not know how much of the difference in size in these "families" is due to boarders, servants and in-laws, and how much is due to differences in number of children? But to have tabulations by provinces and municipalities for family in the sense of "nuclear family" would be most informative and valuable, because this would show how the different areas and localities differ from one another in actual number of children and how these different sized families of children are related to other population characteristics such as income, education, rural and urban residence and similar important factors.

Fifthly, it is to be hoped also that the 1960 budget will permit presentation of data for each province and for the larger cities too—not just for Manila. Presentation of certain more important sets of data for the main islands (those containing or constituting at least one entire province) would also be desirable.

Sixthly, perhaps this may also be the place to suggest that a main index listing sub-indices throughout the volume be placed at the beginning of each book published so that one will not have to hunt through the work to find the page and nature of these sub-indices.

Seventhly, comparisons with the previous census would be more meaningful and worthwhile if made by five-year or ten-year age groups rather than by the two groups employed in the 1948 census, namely, "under ten" and "ten years old and above." These groupings are so broad as to be virtually useless.

Eighthly, the coverage of data in the 1948 census seems quite comprehensive—perhaps too comprehensive. It might be better policy to gather less data on matters of smaller interest and to make greater use of the material gathered. Many extremely valuable cross-tabulations of data gathered in the 1948 census which might have been made were omitted. For example, data on religion, number of children ever born to married women, place of residence, income and age were all collected and presumably were punched onto the same IBM cards. Cross-tabulation of number of children ever born by age of mother and by religion would provide insights of the greatest value into Filipino culture and fertility practises. Again, cross-tabulation of number of children ever born by age of mother and by income of father would show whether there are any fertility differentials among the different Filipino socio-economic classes. Cross-tabulation of rural and urban place of residence by number of children ever born and by age of mother would show what rural-urban differentials exist. Similarly, cross-tabulation of data on highest grade completed by income and by rural or urban residence of father would afford revealing insights into the social structure of our educational system which are not obtainable from the 1948 mode of presentation of the data.