China Scholars Discuss Population Issues

by Janet Fox Mason

Scholars of China’s population from China, the United States, India, Hong Kong, Sweden, and the United Nations met for the China Population Analysis Conference at the East-West Population Institute 19–23 May 1980. The principal objective of the Conference was to bring together specialists to share insights and information about demographic trends and related societal changes in the People’s Republic of China. The meeting was the first professional conference outside of China devoted exclusively to the subject of China’s population. It was the first conference at which several of the population specialists were able to discuss questions of mutual interest face-to-face with their colleagues from China.

In conjunction with the Conference, a Working Group was held at the Institute 25–30 May. During this week 13 persons attended presentations on demographic techniques and computer programs available for analysis of China’s population data, with emphasis on population projections, fertility estimation techniques, and economic demography. Working Group participants were also introduced to technical aids and resources for conducting demographic analysis, including computer hardware, programmable calculators, and population libraries. Both activities were supported by funds from the Office of Population, U.S. Agency for International Development, and from regular Congressional appropriations to the Population Institute. A list of Conference coordinators and participants, together with their affiliations, appears on page 12.

Conference Program

Papers reporting on China’s population data, family planning policy and programs, and projections and consequences of future population growth were presented. Nancy Dowdle, Department of History, University of Hawaii, organized an informal luncheon discussion on China’s minority groups, and Sen-dou Chang, Department of Geography, University of Hawaii, organized a panel discussion on internal migration and urbanization.

China’s Population Data

Several Conference papers examined the sources and quality of population data for China. During the discussion partici-

China’s population was the topic of discussion at a conference held at the East-West Center in May. Specialists from a number of countries met with representatives from the People’s Republic of China to share knowledge about the world’s most populous country and to discuss future collaborative work. Dr. Judith Banister (right foreground) was one of the Conference’s coordinators.
pants acknowledged the sparseness of currently available data but recognized exciting prospects for continued release of collected information and improved analysis as a result of the application of better analytical methods. Moreover, the planned 1981 Census of China promises to be a rich source of new data.

Leo Orleans reflected on his experience during the last 30 years of studying China's population data. He pointed out that because of many uncertainties regarding available population data, scholarly research on China and journalistic accounts have been susceptible to selective citations that support a particular point of view. He characterized recent research on China's population as a process of continuous re-evaluation of earlier assumptions, conclusions, and estimates on the basis of new data or more mature judgment.

John Aird's paper dealt with anomalies in current official population data from China by reconstructing three official data models based on the 1953 and 1964 censuses and a series of vital registration surveys. The models presented population data by age and sex for the period 1953 to 1980 and discussed the implications of official population models for future growth plans and targets. A principal conclusion of the paper was that internal inconsistencies prevent the data from being assimilated into a single coherent model. Another significant finding was the contradiction between the 1964 census age distribution and the 1964 census population total.

Judith Banister's paper described strong points and weak points of official demographic data and the data collection process used in China. Her paper contained a preliminary analysis of recent age-specific mortality data, a brief analysis of fertility and population growth based on birth registration data for births between 1949 and 1977, and an adjustment of the age distribution from 1975 population registers. Among her conclusions: the overall trends in mortality, fertility, and population growth may be detected from China's population data; the quality of age reporting is fairly good; and underreporting of births and deaths has resulted in errors in the estimation of levels of fertility and mortality, and sometimes the population growth rate. Dr. Banister's preliminary estimates of under-registration of deaths (30 percent) and births (13 percent) generated disagreement among several participants, who questioned these high estimates in light of legal requirements for death registration and requirements for birth registration for the provision of food rations, housing, and education.

In his paper John Chao showed the paucity of available demographic statistics on China and presented estimates of major demographic parameters prepared by the United Nations and by John Aird for the period 1963–78. He also summarized the different techniques for determining age distribution, children ever born, and marital status. Recent reassessments of data from early population surveys (1929–31) in rural areas of China that utilized several of these techniques were described. Finally, Dr. Chao outlined minimal data sets necessary for estimation of China's fertility and mortality and collection procedures that could enhance the quality of the data.

The Demographic Situation in China

In spite of the widely recognized homogeneity of China's population and culture, important differences exist in the demographic experience of different sectors of China's population. For the country as a whole, however, participants identified several important demographic patterns: early marriage is rare, there has been marked success in fertility regulation, the proportion of young people is high, and mortality levels appear to be low for a developing country.

In his paper, William Parish contrasted marriage and family practices of China's cities and villages. For residents of rural villages, social life is characterized by high solidarity within the collective or village, combined with a central role for individual families. For urban residents, social life is characterized by circumstances that have necessitated major adjustment (periods of rural work for teenagers, minimal salaries relative to rising expectations, long hours of work, crowded housing

(continued on page 9)
ENNUMERATIONS

SOUTH PACIFIC COMMISSION

☐ Mr. John May has joined the South Pacific Commission (SPC) as Demography and Population Statistics Advisor. He has a postgraduate degree in Demography from the University of Louvain in Belgium and previously served as a United Nations Expert on a demography project in the Caribbean.

Mr. May will be working with a joint SPC/UNFPA (United Nations Fund for Population Activities) project, "Technical Assistance and Training in Census, Demography, and Population Statistics." The project, which is supervised by SPC Demographer Drs. Ko Groenewegen, aims to build a regional demographic statistical capability to meet the requirements of Pacific Island governments.

JAPAN

☐ The thirteenth census of Japan since 1920 will be held 1 October. Japan conducts a census every five years, with large-scale censuses undertaken in years ending in zero and simplified censuses in years ending in five. Japan enumerates its population on a de jure basis, which is defined as the place where "a person usually lives"; exceptions are made for students attending schools, patients in hospitals, crews aboard ships, self-defense forces living in camps, prisoners, and persons who have no usual place of residence.

The 1980 Population Census questionnaire contains 22 items: name, sex, year and month of birth, relationship to head of household, marital status, nationality, time moved into present house, previous address, education, type of economic activity, industry, occupation, employment status, place of work or school, journey to work or school, type of household, number of household members, source of household income, type of tenure of dwelling, number of dwelling rooms, area of floor space of dwelling rooms, and type of building and number of stories.

An outline of the 1980 Population Census of Japan will appear in the November issue of the Forum. It was supplied by Correspondent Shiotaro Yanagawa, Deputy Director of the Statistical Information Division of Japan's Statistics Bureau.

WORLD FERTILITY SURVEY

☐ Sir Maurice Kendall, Project Director of the World Fertility Survey since 1972, has retired from his post. He was responsible for guiding the Survey organization from its inception and building the research program to what he often called the largest social survey ever undertaken. By the end of 1979, 41 developing countries and 20 developed countries had joined in the enterprise, which is an attempt to assess the current state of human fertility throughout the world.

Dr. Miloš Macura has been appointed as the new Project Director. A member of the WFS Program Steering Committee, he was Director of the United Nations Population Division from 1966 to 1972 and President of the International Statistical Institute from 1975 to 1977. He is a Council Member of the International Union for the Scientific Study of Population.

SOLOMON ISLANDS

☐ Mr. Charles A. MacFadden, Government Statistician with the Solomon Islands Statistics Office for more than six years, resigned his post in April. He was succeeded by Mr. Ian Taylor, who was Rural Statistician in the Statistics Office for about two years before becoming Government Statistician.

INDONESIA

☐ Dr. Sam Suharto, formerly Director of the Data Processing Center of Indonesia’s Central Bureau of Statistics (CBS), has a new title to reflect his broader responsibilities. He is now Director of Population and Social Statistics at CBS. Dr. Suharto, a longtime Census Forum correspondent, sent two reports about Indonesia’s 1980 Census. The first describes preparations for Indonesia’s upcoming national census; the second focuses on special techniques and procedures needed to enumerate the people of Irian Jaya.

Indonesia’s 1980 Census

The 1980 Population Census of Indonesia will be conducted from 20 September through 1 November 1980, with the census date falling on 31 October at midnight. Indonesia has the fifth largest population of all countries of the world—an estimated 145 million persons by the end of 1980. The country is an archipelago consisting of more than 13,000 islands, about 6,000 of which are inhabited. The 1980 Census will be the third census conducted since the country obtained its independence in 1945; the others were in 1961 and 1971.

Preparations for the 1980 Census are well advanced. Before the final questionnaire was decided upon, five pilot censuses were carried out in different parts of the country. Finally, in March 1980 a dress rehearsal of the census operation was conducted in the province of Lampung in southern Sumatra. The rehearsal was aimed at studying all aspects of the field operations, including training, recruitment, publicity, field supervision, document flow, and overall administration including payment to all the census enumerators. Data collected during the rehearsal are now being used as a rehearsal for the editing and coding operations and will be the test data for the development of the computer system and programming.

The enumeration procedure will be similar to that used in the 1971 Census. It consists of two stages, the complete census and the sample census. At the end of 1979 the mapping operation for the whole country was undertaken, and census maps are now available. During the mapping stage delineation of Enumeration Areas (EAs) was also done; these areas are further divided into Census Blocks (CBs). Each CB contains about 100 households, and one EA consists of about three CBs. In the whole country there are about 224,000 EAs, and one enumerator will be assigned to each EA in the complete census. A 5 percent sample of CBs will be enumerated, and for this task 26,000 persons will be employed.

The training for census enumerators is conducted in two stages for sample-census enumerators and in three stages for
complete-census enumerators. A team of 16 master instructors has been assembled. Members of the team include persons who were involved in the design of the questionnaires and in the writing of the instruction manual. At the final stage the master instructors attended a seven-day workshop to discuss the best way to explain the training materials to the trainees. Common understanding of all aspects of the training materials is very important, since any deviation will be magnified through the subsequent training stages.

The first stage of training was for the 400 national instructors, who were recruited from all over Indonesia. They included CBS staff members as well as professors and researchers from various universities who are members of the Indonesian Demographic Society. This training was conducted from 19 June through 9 July 1980. The second-stage training will be conducted in each province for the district census coordinators, who will later train the complete-census enumerators and the sample-census enumerators. The second-stage training will be conducted from 23 August through 19 September, and the third-stage training will be conducted from 10 September through 19 September. Three separate groups will be trained during the second stage, with the first group being the regional instructors who are also the district coordinators.

The enumeration will be conducted on a de jure basis, except for people who do not have a permanent residence, such as the homeless, people living on boats, and ship crews, who will be enumerated on a de facto basis. The complete-census enumerators go into the field first, making sketch maps of the location of houses on the census block maps, placing census numbers on all the buildings, and filling out the household listing schedule. The complete-census questionnaire is filled out at the same time. The sample-census enumerators will start the enumeration in the selected blocks which have already been enumerated by the complete-census enumerators. On 1 November the complete-census enumerators will visit all houses again to check and adjust, if necessary, for births or deaths in each household occurring before midnight 31 October 1980.

Considerably more information is to be collected in the 1980 Population Census than in the 1971 Census. The complete census will ask questions about dwelling utilization, sex, age, relation to head of household, marital status, nationality, religion, agricultural holdings, and disabilities. The sample census will collect more detailed information about the household, including material used for housing, floor space, fuel for lighting and cooking, source of drinking water, garbage disposal, and ownership of durable goods. Information collected about the individual will include relationship to head of household, sex, age, date of birth, place of birth, marital status, language, educational attainment, residence five years ago, last place of residence, duration of residence in current province, sickness during the past week, activity during the past week, occupation, industry, number of hours of work per week, age at marriage, number of children born alive, number of children still living, last child born, and contraceptive knowledge and use.

The first results of the census—limited to total population by sex and by province—will be announced at the end of the year. The advance tables will be published by July 1981 and the remaining tables will be published after that, with the last ones scheduled to be issued by the end of 1982.

Enumerating the Population of Irian Jaya

During the Seventh Population Census Conference conducted in September 1979 by the East-West Population Institute in Honolulu, a session was held to discuss the census enumeration of minority populations. Many countries in the world have minority groups that require special techniques and procedures for census enumeration owing to the unique characteristics of these populations. The degree of difficulty of enumerating these groups depends, of course, on the special characteristics that have made them minorities. Enumerating the Spanish-American population in the U.S., for example, poses fewer problems than counting the people in the Hill Tribes in Thailand, for whom a separate census must be planned.

Indonesia has many such population groups on almost all of its major islands—the Badui in West Java, the Kubu in Sumatra, some of the Dayak tribes in Kalimantan, and more than half the population of the interior of Irian Jaya (the Indonesian part of New Guinea island).

The Indonesian Central Bureau of Statistics has carefully planned for the enumeration of such population groups throughout the country. In those areas, the census enumeration will be conducted by special task forces consisting of interviewers, guides, and security guards. Except in Irian Jaya, enumeration can be conducted by direct visits to each household or through the chief of the tribe. By using these procedures it is hoped that no major difficulties will be encountered.

Irian Jaya, the easternmost province of Indonesia, has the largest land area of all Indonesian provinces—421,981 square km. It is more than three times the size of Java and contains more than one-fifth of the total land area of the Indonesian archipelago. The province borders on and shares an island with Papua New Guinea, which occupies the eastern part of the island. The population of Irian Jaya is estimated to be a little over one million, with the density of 2.6 persons per square km. Thus Irian Jaya is the least densely populated area in Indonesia, in contrast with Java, which has a density of 600 persons per square km. The island is mountainous with rugged terrain covered by thick tropical vegetation. In most places no one has ever tried to cut through the jungle. The highest peak, Mount Jaya, has a permanent blanket of snow.

Most of the people in the interior of Irian Jaya still live in the traditional way that their ancestors lived and still make and use stone tools. More than half of them live in small groups or tribal settlements, where more than 250 different languages are spoken. Only a few of the tribal tribes have ever been outside their villages and are able to communicate with anyone outside their villages. Missionaries have been in various locations for years, and they have helped to open up the interior of Irian Jaya to the outside world. Most of the people are illiterate; communication among tribes is not always good, and sometimes they are still hostile to each other. Warring among tribes was common, but the

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Measurement of Death Registration Completeness Using the Growth Balance Procedure Applied to Data from India

by William Brass and Subramania Swamy

In a previous note (Brass, 1979) a new method was presented for the simultaneous evaluation of the completeness of death registration and census coverage. Briefly, two equations were formulated as:

\[ N_y/P_y = r_y + f_y d_y^* \]  \hspace{1cm} \text{and} \hspace{1cm} \[ d_y^* = -\delta_y + f_y d_y^* \]

where \( N_y \) and \( P_y \) are the numbers living around the age point \( y \) and above \( y \), respectively; \( r_y \) is the growth rate of the section of the population aged over \( y \); \( d_y^* \) is the death rate at ages over \( y \) calculated from the registered deaths in the relevant period and population aged over \( y \); \( f_y d_y^* \) is the corresponding true death rate at ages over \( y \); \( d_y^* \) is an independent calculation of the death rate at ages over \( y \) from intercensal survival data; and \( \delta_y \) is its error. Because errors in the registration of deaths in an age group tend to be proportional to the numbers of deaths, \( f_y \) will often be approximately a constant. But errors in census coverage that are proportional to the numbers of persons in an age group lead to \( \delta_y \) which is also a constant \( \delta \). When \( N_y/P_y \) and \( d_y^* \) are plotted against \( d_y^* \) on the same graph, the two sets of points may be closely fit by two parallel lines. The common slope of these lines gives an estimate of \( f \), a multiplier for correcting registered deaths to give true deaths. The intercept of the line through the points \( d_y^*, d_y^* \) on the y axis gives a measure of \( \delta \), the bias in \( d_y^* \) due to errors in relative census coverage.

Previous Application to Thailand

An example was given in which \( d_y^* \) was based on the numbers of females recorded in five-year age groups at the 1960 and 1970 Censuses of Thailand and \( d_y^* \) was based on the deaths registered in the intercensal interval. \( N_y \) and \( P_y \) were taken from the population at risk, defined by the average of the numbers by age at the 1960 and 1970 Censuses. Thus \( d_y^* \) and \( d_y^* \) were independent estimates of the sectional death rates in the 1960–70 period. Both sets of points lay fairly closely about straight lines. In order to examine the slope parallelism more critically, the points for \((N_y/P_y) - 27\) were plotted to bring the lower values in the two sets into close coincidence. The graph from the previous note is repeated in Figure 1. There is good agreement between the slopes of the two sets of points up to ages in the early fifties. For the four oldest ages (57.5, 62.5, 67.5, and 72.5) the \( d_y^* \) points fall progressively below the \((N_y/P_y) - 27\) points and the latter are more linear. In the slope estimation the last four \( d_y^* \) points were effectively ignored. The inconsistency, however, suggests that there were errors in the assumption and casts doubts on the reliability of the estimates of registration and census coverage.

Bias Due to Age Errors

In a number of other applications of the method the two sets of points have been reasonably linear but there have been divergences in slope. In the more extreme cases the inconsistency has clearly been due to notably different age distributions at the two censuses. The intercensal survival-based estimates \( d_y^* \) are then badly biased because they depend on the differences \( P_{A-\frac{1}{2}t}^A - P_{B+\frac{1}{2}t}^B \) where \( A \) and \( B \) denote the first and second censuses with an interval of \( t \). Modest changes in the nature of the age error at the second as compared with the first census can have a large effect on \( P_{A-\frac{1}{2}t}^A - P_{B+\frac{1}{2}t}^B \). It is easy to devise error models that lead to the \( f \) in \( d_y^* = -\delta + f d_y^* \) being a poor correction for completeness of registration. In these circumstances the best plan is probably the application of the original sectional growth balance procedure using \( N_y/P_y \) separately at periods around the two censuses.

In the application to Thailand and other applications the inconsistency is relatively small and changes in the age distribution between the two censuses are not so obvious. But biases can occur if the same age errors are present in the two censuses. In particular, if there is an increasing tendency for ages to be overstated in the latter part of life, a downward bias in \( d_y^* \) will occur of the kind seen for Thailand. It is generally
accepted that such age exaggeration occurs although it is very
difficult to quantify it.

Application to Indian Data

Data from India offer particularly good opportunities for the
examination of the nature of the errors in the growth balance
methods. India has two systems of vital registration, one tradi-
tional and long established and the other a sample and
dual-recording system. In the well-known Sample Registration
System vital events are recorded both by longitudinal regis-
tration and through regular household surveys. The results are
matched and discrepancies checked by further household
visits. Field studies have shown the completeness of the
Sample Registration System to be good overall and it appears
to be excellent in some states.

The use of the Indian data to evaluate the growth balance
methods is illustrated here by a detailed application to males
in Kerala, a state where the Sample Registration System is
believed to be good. Table 1 gives the sectional death rates for
the period 1961–71 as calculated from the traditional vital
registration data and intercensal survival methods and from the
Sample Registration System for 1971. It also shows the
$N_Y/P_Y$ values. In Figure 2 the Sample Registration System
death rates ($d_Y^S$) are plotted against the traditional registration
($d_Y^*). The points follow rather closely a straight line through
the origin with a slope of 1.5. On the assumption that the
sample registration measures have good reliability, the linearity
provides strong evidence that the incompleteness of the tradi-
tional registration is approximately the same at all ages beyond
childhood; the replacement of $f_Y$ by a constant $f$ is then
justified.

The differences ($N_Y/P_Y - d_Y^S$) are also given in Table 1. They
are a little erratic but show no consistent trend. The arithmetic
mean of all the differences is 27.69 per thousand; the corre-
spanding means for the first six values and the last six values
are 27.13 and 28.60 per thousand respectively. If $N_Y/P_Y$ is
plotted against $d_Y^S$, then, the points fall on a line with a slope

![Figure 2 Plot of $d_Y^S$ (1971) against $d_Y^*$ (1961–71): Kerala State, Males](image)

of one or slightly above. Even if some allowance is made for
the difference in mortality between 1961–71 and 1971, the
results indicate that the Sample Registration System coverage
is nearly complete relative to the census, that the sectional
death rates are reliable, and that the $r_Y$ can be taken as ap-
proximately constant. The comparisons through the inter-
mediacy of the Sample Registration System rates then sup-
port the assumptions of the sectional growth balance equation
in the form $N_Y/P_Y = r + f d_Y^*$. To investigate the features of the intercensal mortality esti-
mates ($d_Y^S$), the same approach is used for Kerala State that
was used for Thailand. Figure 3 shows the plot of $d_Y^S$ against

Table 1 Sectional Birth and Death Rate Measures: Kerala State, 1961–71, Males (Rates per thousand)

<table>
<thead>
<tr>
<th>Age in years ($Y$)</th>
<th>Intercensal, $d_Y^S$</th>
<th>Registration, $d_Y^*$</th>
<th>Sample Registration System (1971) $d_Y^S$</th>
<th>$N_Y/P_Y$</th>
<th>$(N_Y/P_Y) - d_Y^S$</th>
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<tr>
<td>5</td>
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<td>10</td>
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<td>74.95</td>
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SOURCES: Column (2) is derived from Series 1, Part II-C(ii), Social and cultural tables, Census of India, 1971, and Volume 1, Part II-C(ii), Social and
cultural tables, Census of India, 1961. Column (3) is obtained from Vital Statistics of India, 1961–71. Column (4) is unpublished data derived
from Sample Registration System, 1971. The source for Column (5) is the same as that for Column (2).
Table 2 Adjusted Intercessal Death Rate Comparisons: Kerala State, 1961–71, Males (Rates per thousand)

<table>
<thead>
<tr>
<th>Age in years (y)</th>
<th>( \Delta d_y^† ) (adjusted)</th>
<th>( \frac{N_y}{P_y} )(-25.5 )</th>
<th>( 2 + 1.5 \Delta d_y^* )</th>
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<tbody>
<tr>
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</table>

SOURCE: In Column (2), the values from 40 years and over are obtained from Column (2) of Table 1 by adding an extra factor 0.05\(N_y/P_y\).

\( y - \frac{1}{2}t \) to \( y + \frac{1}{2}t \) be \( e_y \). Then the error in the numbers estimated to have died in the census interval at over \( y \) years of age is approximately \( e_y t N_y \), since \( N_y \) is the number per year at age \( y \) (and approximately per year in the age interval) and \( e_y t \) is the error in the length of this interval. In the calculation of the sectional rates the deaths are divided by \( t \) (to give deaths per year) by \( P_y \). The bias in \( d_y^† \) is then \( e_y N_y/P_y \). Another smaller error is due to the fact that the nominal \( y \) is not the true \( y \), but this affects the number at risk and hence the \( d_y^* \) as well as the \( d_y^† \). Since \( N_y/P_y = r + f d_y^* \), the error in \( d_y^† \) can be introduced into the equation as \( d_y^† + e_y(r + f d_y^*) = -\delta + f d_y^* \) or \( d_y^† = -\delta - e_y + f(1 - e_y)d_y^* \). If \( e_y \) has little consistent pattern at lower ages but is positive and relatively constant at older ages, the outcome would be deviations in \( d_y^† \) downward from a fitted line with slope \( f \), exactly of the kind found for Kerala and Thailand. As an illustration the values of \( d_y^† \) at 40 years and over for Kerala males have been adjusted by the addition of 0.05\(N_y/P_y\), that is, by taking \( e_y \) as 0.05. There is excellent agreement with \( (N_y/P_y) = -2.25 \) and with \( 2 + 1.5 \Delta d_y^* \). The results are shown in Table 2. The adjustment is too small for it to be practicable to judge the plausibility of the alternatives against model life tables.

Conclusion

The main conclusion from the investigation is that \( d_y^† \) should not be compared with \( d_y^* \) alone. It is necessary also to examine the equation in \( N_y/P_y \) (which can always be calculated from the same data). When the points for \( d_y^† \) follow the same slope as those for \( N_y/P_y \) at lower values of \( y \) but diverge downward at higher values, a likely explanation is increasing age exaggeration in the censuses at later years of life. The \( N_y/P_y \) points must then be accepted as the more reliable at older ages. However, the greater smoothness of the points in the \( d_y^† = -\delta + f d_y^* \) equation at younger ages is an aid in the estimation of the best correction for \( f \). Conversely, the greater reliability of the \( N_y/P_y \) measures at later ages helps in the estimation of \( \delta \), the average census coverage change in the popul-

Analysis of Age Errors

If the deaths estimated from intercensual survival are too low there are several possible reasons. Migration or changes in census coverage may have affected the differences \( P_y - \frac{1}{2}t - P_y + \frac{1}{2}t \) at later ages to a greater extent than allowed for by the rough average adjustment \( \delta \) in the equation \( d_y^† = -\delta + f d_y^* \). For Kerala males \( \delta \) can be seen from the fitted line in Figure 3 to be about \( -2 \) per thousand. It seems unlikely that migration of older males could have caused a serious distortion. Changes in coverage at later ages are always a possibility, but it would be a sporadic, erratic occurrence; the downward divergence in \( d_y^† \) appears to be more systematic. The most plausible explanation is the overstatement of ages in approximate agreement with the model formulated below.

Suppose that in the census data there is an increasing tendency for ages to be overstated so that the numbers shown as being over \( y \), \( P_y \), are really over \( y - c \); the same error is assumed for both censuses. Then \( P_y - \frac{1}{2}t - P_y + \frac{1}{2}t \) will be in error. If the same bias \( c \) exists at \( y - \frac{1}{2}t \) and \( y + \frac{1}{2}t \), the effect will be small, but an increasing \( c \) with age will introduce a considerable error. Let the rate of increase in the apparent age interval

\[ d_y^∗: \text{Civil registration death rate} \]

\[ \text{Rate (events per thousand population)} \]

\[ \text{Fitted line: } 2 + 1.5d_y^∗ \]

\[ \text{Figure 3 Plot of } (N_y/P_y) - 25.5 \text{ and } d_y^† \text{ against } d_y^∗: \text{Kerala State, 1961–71, Males} \]
lation aged five years and over as a rate per year of the interval. The application of the two growth balance equations to many sets of data, of which Kerala State is illustrative, has emphasized particularly the uncertainty of mortality estimation from intercensal survival without powerful checks.

REFERENCES


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Indonesia's Census (continued from page 4)

government has been successful in recent years in preventing these wars. During the past ten years much effort has been put into development in Irian Jaya, but the status of their civilization has required that the effort be adjusted to the local conditions.

The census operation in this province obviously requires special planning and special procedures. It is not possible to conduct a conventional census enumeration as in other parts of the country. The Government of Indonesia is determined to carry out the 1980 Census in all parts of the country, including Irian Jaya and the newly established province of East Timor.

Planning for the census in Irian Jaya was started in September 1979. Dr. Suharto visited the province and went to one of the regencies, Jayawijaya, in the central part of the island, where he had thorough discussions with local authorities. It was decided to have two systems of enumeration. The first will be used in certain parts of the island where it is possible to use enumeration methods similar to those planned for the rest of the country. The second system will be used in the greater part of the island where the usual direct method cannot be employed. An inventory of areas was made at the end of 1979, and it was determined that the special method must be used in 550 villages, or for 72 percent of the Irian Jaya population.

The enumeration in these areas will use the team approach. A number of teams from each subdistrict (Kecamatan) will be formed according to the number of villages to be visited and the distance or accessibility to each of those villages. Each team will consist of from seven to nine persons and will include two or three enumerators, one or two guides, and two armed security guards. Each team will be assigned to visit several villages, which will be chosen to minimize the distance that each team must journey on foot in the jungle. The teams must be equipped with all their food and other materials needed during the journey, the most important of which are the questionnaires needed for the enumeration! In addition, each team must also carry “contact materials” in order to gain cooperation from the population. Salt and tobacco will be used for this purpose, and in some areas they will also bring “red money”—the Indonesian one-hundred rupiah note, which is red.

Prior to undertaking the enumeration the enumerators must receive training from a specially trained instructor who will be sent to various districts. It is worthy of note that the only means of transport is chartered plane or helicopter, which costs Rp. 78,000 (U.S.$130) per hour, or chartered motorboat for the coastal areas. The subdistrict head will inform each tribe in his district by special messenger about the team coming to the area and will ask that they be allowed to talk to the chief of the tribe.

The tribal chief will be requested to gather all his people in an open field that is usually used for ceremonial purposes. The chief will ask the people to bring their sweet potatoes or taro, and the team will buy those products with the salt, tobacco, or red money that they have brought with them. The food will then be cooked and shared as a feast. During the time of exchange the enumerators will be interviewing each household through an interpreter with a very simple questionnaire.

The information collected will be limited to total population by sex and broad age groups. Although sex will be readily known (most of these people do not wear clothing), it will be almost impossible to collect the age data. Dr. Suharto says that CBS will rely on the enumerator’s skill, although some probing or estimating techniques will have to be used since the tribal people count only as high as the number of fingers on their hands. After the team has finished with one tribe, it will move on to the next tribe until all the assigned areas have been covered.

CHANGES AT THE CENSUS FORUM

Dazzled by our new design? The *Asian and Pacific Census Forum* has a new look beginning with this issue. We hope you’ll find it attractive and easy to read. We are grateful to Elsa Carl of the Honolulu design firm of Clarence Lee, Inc., for giving the *Forum* its new appearance.

Changes are also coming to the editorial side of the *Census Forum*. Dr. Griffith Feeney, who has served as Technical Editor since 1978, will be spending a substantial portion of the next year in Jakarta, where he is working with the Central Bureau of Statistics on Indonesia’s 1980 Census. Dr. Robert Rutherford will serve as Technical Editor during Dr. Feeney’s absence. Dr. Rutherford, who is Research Associate and Assistant Director for Graduate Study at the East-West Population Institute, is a frequent contributor to these pages. He will begin his editorship with the November issue. If you are planning to write a technical article for publication in the *Census Forum*, please address your inquiry to Dr. Rutherford.
(continued from page 2)

conditions) but which have not altered the distinctive loyalty to the individual family. He argued, then, that to understand social change in China, it is necessary to be aware of the particular circumstances of social life as well as ideological government appeals. The delay of urban marriages provides an example of how nonideological constraints may come into play, for aside from the official birth control program, marriage has been delayed because of practical considerations. For example, teenagers serve two to four years working in the countryside; wages are at the subsistence level in the early years of job-training programs; and urban housing is in short supply. During the discussion period, some participants pointed out that these data and this interpretation contradict other observations and official Chinese policy that ideological mobilization and bureaucratic control have been effective in bringing about later marriage and lower fertility. It was also suggested that possibly dramatic results could be obtained for a short time from an intense political campaign, but that social conditions might exert more long-term influence on fertility.

In recent discussions of China's demographic situation, less attention has been devoted to the age-sex characteristics of the population than to issues like population growth and size, even though there are few variables more crucial to population growth than the age-sex structure. H. Yuan Tien's paper discussed how data on age-sex distribution have been used to underscore the decision to implement the "wan, xi, shao" (later marriage, longer intervals between children, fewer children) policy. He reported that persons below age 21 account for roughly half of China's population. Information on previous peak birth cohorts and future reproductive age has been used to support the need to initiate planned reproduction.

Haitung King's paper reviewed the early general mortality profile of the Chinese in various areas of China before 1949. From 1949 to 1974, mortality statistics are available for only a few big cities. The most recent data available for the country as a whole were published after a 1973–75 survey conducted by the Cancer Institute of the Chinese Academy of Medical Sciences. From the survey data, Dr. King calculated age-specific death rates for 1975 and compared them to Chinese in Taiwan and the United States and Japanese in Japan. He found that the age-specific death rate for the PRC in age group 0–4 (13.62 per thousand) was apparently too high, perhaps because registration of deaths among infants was more complete than registration of deaths among older persons or because children aged 0–4 who died in 1975 were more accurately registered than those in the 10 percent sample of living children in those ages. The very low death rate at advanced ages suggested either incomplete death registration or exaggeration of ages or both. A marked improvement in survivorship over the years 1930–75 in selected areas of China, particularly among persons in younger age groups, was demonstrated. A much reduced infant mortality was shown for China after 1950. Findings on infant health, however, were based almost exclusively on hospital data (which can be misleading) and, like statistics on general mortality data, were gathered from big cities which represent only a small proportion of the Chinese population. Dr. King pointed out that there is presently no nationwide health surveillance system that reports detailed morbidity and mortality statistics for China. He discussed available information on infectious and parasitic diseases and described recent medical research on environmental and occupational health.

John Philip Emerson's paper focused on supply and demand factors in China's nonagricultural labor force. Employment policy in China could be characterized as a tradeoff between guaranteed jobs and economic efficiency. Welfare aspects of employment (e.g., job placement for urban youth who drop out of school) are among the most basic policy considerations. Several unusual features of the Chinese labor market were stressed, namely, rustication (the resettlement of urban youth in the countryside), temporary labor (such as contract peasant labor for work in urban areas), and the "substitution system" (whereby jobs are passed from one generation to another, often when a parent elects early retirement). These symptoms of oversupply and underutilization of labor were thought to be caused by the monopoly on job allocation formerly exercised by urban labor bureaus. On the labor demand side it was noted that there was little national planning until the 1970s. Since then the trend has been to relax hiring practices somewhat and to allow more freedom of choice to job seekers. For example, to reduce unemployment, job seekers are now encouraged to form collectives to supply needed urban services.

Changes in China's employment policy in general have caused concomitant changes in the country's policy on women, according to a paper presented by Marina Thorborg. She provided a brief account of the policies toward women in China during 1911–49 and then focused on women in the nonagricultural labor force of the postrevolutionary period, 1949–80. She discussed how policies on women had contradicted each other during the last 30 years, as short-run economic policy has been altered to achieve the long-term goal of nationalization of labor and collectivization of agriculture.

Family Planning Policy and Programs

Official ideology in China's birth planning program is to combine state guidance with voluntarism. In his paper, Pi-Chao
Chi-hsien Tuan discussed the technology used in family planning programs like those described in the Shifang and Tientsin studies. Since the beginning of the program in 1959, China’s birth control techniques have moved from sterilization for higher parity women to sterilization of lower parity women; from mechanical devices to the pill; from more expensive to less expensive measures; from pills having short-term effectiveness to those having long-term effectiveness; and from concentration on women as the program’s clientele to the participation of men. The present program employs medical, surgical, or medicinal contraception; all these methods have become available and nothing is banned as illegal.

Wai-Ying Tsui’s paper shed light on the implementation of demographic-health policy in rural health care programs in China. Data from Huancheng and Doushan communes in Guangdong Province were collected to illustrate the differences and similarities in access to health care. In 1976 the financing and management of health care delivery systems in many localities in China was shifted upward from the brigade to a joint brigade-commune level. Under this arrangement smaller brigade units pooled financial contributions, thereby standardizing somewhat the level of care available among communes. For this reason, the Huancheng and Doushan communes were found to be organized similarly, with administrative-political units having authority over medical personnel in access to health care. But the availability of care to commune members differed significantly between the two communes, even though both of them are located in the relatively prosperous Pearl River Delta. Disparities included a faster rate of development of health care and higher quality care in Huancheng. Proximity to urban centers and differences between the income of the communes explained the disparities identified.

Rushikesh Maru presented a preliminary comparative analysis of family planning program performance in India and China and suggested a few hypotheses to explain differences in performance. During the past two decades the limited data available suggest that the Indian and Chinese populations increased at roughly similar rates but that both births and deaths may have declined more rapidly during the late 1960s in China than in India. During the 1970s both countries experienced declines in natural increase rates, but such declines appeared much faster in China than in India. Dr. Maru hypothesized that part of the decline in China’s birth rates in the 1960s may be related to larger socioeconomic changes in China (e.g., the collectivization of social and economic life and geographical mobility), and that differences in program design and implementation in China hastened this decline in natural increase rates.

Projections and Consequences of Population Growth in China

The question of how rapidly and how far China’s birth rate will fall in the next two to three decades was one of the most discussed subjects of the Conference.

Y.C. Yu used two different approaches to project the population of China to the year 2000. The first approach was a curve showing the rate of growth for the period 1971–2000 which was derived on the basis of official population growth

John Philip Emerson (center) of the U.S. Bureau of the Census talks with other Conference participants.

Chen furnished details of how this principle is operationalized: accessible free birth planning services; the establishment of birth quotas for municipalities, neighborhoods, and communes; and consultation among couples at the commune or neighborhood level until consensus is reached on a community plan for complying with the official quota. Commune or district birth planning committees, with representatives of relevant units within the community (such as the community Party committee, the public security police, the women’s federation, or the local health center), supervise implementation of local birth planning targets.

Two particular examples of birth planning programs were discussed in detail at the Conference. The first example, Shifang County in Sichuan Province, was outlined by Liu Zheng in his paper. Professor Liu proposed that this particular program had been successful because the population of Shifang understood from past experience the undesirable consequences of unchecked population increase: increasing scarcity of arable land, the lag between grain production and population growth, difficulty with capital accumulation, and future difficulties achieving birth planning targets because of past birth cohort peaks. He demonstrated in his paper how population statistics can be used to show contrasts between birth planning and unchecked births.

The second example of the operation of a planned birth program was Tientsin municipality, discussed in a paper presented by Katherine Lyle. This paper furnished data from the municipal office for planned birth in Tientsin for 1978, from which were derived three indices of compliance with the reproductive norms of later marriage, longer birth intervals, and fewer children. The first index, contraceptive prevalence rate, was estimated to be 81 percent among married women of reproductive age in the municipality as a whole. The second index, called a late marriage rate, measures the proportion of couples marrying in a given year who have complied with the official late marriage targets. In Tientsin this rate was found to be 95 percent among married men and women in the municipality as a whole.
targets: from 12.05 per thousand in 1978 to below 10 per thousand by 1980, to 5 per thousand by 1985, and to zero by the year 2000. The second approach used the cohort-component method combining midyear age compositions of 1978 and average fertility and mortality rates for 1973–78 as base data; six further projections were prepared using different assumptions about future demographic trends. From the results of the six projections, possible changes in age composition over time and the resulting implications for social and economic development were discussed. It was pointed out that even if family planning brings about the desired fertility reduction and if continued improvements in health bring about the mortality changes assumed, the population growth could not decline to zero by the year 2000 even according to the lowest projection. A second important conclusion was that acceleration of campaigns to reduce births will hasten the aging of the population.

In his paper, Paul Kwong described contraceptive and abortion requirements necessary to achieve China’s more imminent target growth rate of 5 per thousand by 1985 based on the present population growth rate of 12 per thousand. Dr. Kwong used a set of computer programs called ETSS (ESCAP Target Setting System) in his analysis. He described how one computer program called COMPETE can provide the annual number of users and births averted by birth control methods adopted during the target period once the proportion of contracepting women at each age group and the retention experience of each woman are calculated. Capabilities of the TABRAP and CONVERSE programs of the ETSS package were also described. Using these programs, Dr. Kwong simulated China’s family planning program experience to 1985, using plausible assumptions derived from Taiwan and Singapore data in addition to information from Jiangsu and Sichuan Provinces.

Robert Dernberger evaluated the economic consequences of population growth in China during the next 20 years, based on population projections prepared by Conference participants John Aird and Tien Xueyuan (and his colleagues) and based also on a forecast of certain changes in economic policy. On the employment side, he predicted that the rate of growth of the nonagricultural labor force will decrease to 4 percent annually for a population growing at a rate below 2 percent a year. Higher agricultural yield, however, will be accomplished only through capital-intensive methods which will not absorb the projected 72-125 million new agricultural workers. Dr. Dernberger believes China is likely to see open or disguised unemployment in both the agricultural and urban sectors, but especially in agriculture. On the consumption side, he expected national income per capita to increase at an average annual rate of 5 to 5.5 percent, but the growth of food grain supplied per capita to continue to be a problem. If, as he predicts, material incentives will increasingly be offered to increase output, some individuals and production teams that are already in a relatively favorable position for distribution of foodgrains and basic necessities will be better able to take advantage of the new system of material incentives than those at the lower level of the income distribution.

Future Demographic Activities

The elements of the current population assistance program proposed by the United Nations Fund for Population Activities were outlined by Siri Melchior-Teller. The proposed program contains ten areas of emphasis: conduct of the 1981 census, census analysis and data utilization, demographic training and research, a population information center, improved maternal and infant care, training for family planning workers, postgraduate training for maternal and child health and family planning professionals, family planning statistics and program evaluation, a national research institute for family planning, and an institute of developmental biology.

The Conference was the most recent undertaking in a continuing program of professional education and research related to the Population Institute’s project on Analysis of Population Growth.

Janet Fox Mason is Program Officer at the East-West Population Institute. She would like to thank Dr. Judith Banister for her careful review of and suggestions for this article.
CHINA POPULATION ANALYSIS CONFERENCE AND WORKING GROUP
19–30 May 1980

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* Participated in the Conference only (19–23 May).
† Participated in the Working Group only (26–30 May).

Participants in the China Population Analysis Conference were (first row, left to right) John Chao, H. Yuan Tien, William Parish, Judith Banister, EWPI Fellow Paul Gregory, Leo Orleans, Robert Dernberger, and Paul Kwong; (second row) Sen-dou Chang, Hailing King, Pi-chao Chen, Florence Yuan, Liu Zheng, Yuan Fang, Jiang Qi, Chi-hsien Tuan, Wai-Ying Tsui, Tien Xueyuan, Marina Thorborg, Nancy Dowdle, Zhang Luqun, Katherine Chiu Lyle, EWPI Degree Participant Mariam MacDorman, and Rushikesh Maru; (third row) Y.C. Yu, EWPI Program Officer Janet Mason, University of Hawaii Professor Shang Ho, Victoria Ho, John Aird, EWPI Fellow U Tha Than Oo, Griffith Feeney, Peter Smith, Thang Jiao Dong, Siri Melchior-Tellier, Richard Lee, and Philip Emerson.
LETTERS TO THE FORUM

Census Editing and Imputation: The Australian View

First let me congratulate Dr. Banister for opening up debate on editing and imputation in the population census (Asian and Pacific Census Forum, February 1980). It takes great courage to question conventional wisdom in any field. I can sympathize with how she must feel because we in Australia have long been supporting and practicing the policies she recommends and have felt somewhat isolated in this approach. That is not to say that we did not also get carried away with enthusiasm as we entered the computer age. With the application of large-capacity computers to census processing, great opportunities opened up for an expansion to occur in editing and imputation techniques not possible with the mechanical card-sorting equipment in use for previous censuses, and initially we decided to take advantage of those opportunities.

In the two Australian censuses prior to 1966, information from the census forms was manually transcribed to mark-sense cards, which, when passed through mark-sense card-punch machines, were converted into the traditional punched card records suited to mechanical sorting and tabulation. Machine editing by the card-punch machines was limited to the checking of fields for illegal blanks, nonblanks, and illegal double marks, there being no means of providing interrecord balancing (record totaling) checks, valid code range edits, or intrarecord consistency edits. These had to be applied clerically, a tedious and expensive process, particularly when performed at the output stage.

The deficiencies of the card-punching equipment were overcome with the introduction of computers for the processing of the 1966 Census. Thereafter the only limits placed on editing and imputation were the capacity of the computer and capabilities of statisticians and programmers.

Although a major expansion in editing resulted from the use of computers, census statisticians were cautious about the use of computers for imputation, which in 1966 was performed clerically and limited to the questions described by Dr. Banister as those used as a classifier in many census tables and having a low proportion of responses unknown. Nonresponse to most census questions was coded and tabulated in “not stated” categories.

The edits for 1966 fell into two groups, those declared as fatal—which called for manual referral to source documents before amendment—and those for which corrective action was performed automatically by computer. The former group covered illegal blanks, nonblanks, range edits, and some inter- and intrafield consistency edits. These errors constituted the majority of all errors, and corrective action was very labor-intensive. The automatic corrections, on the other hand, were inexpensive to apply since there were relatively few cases and no manual intervention. However, considerable resources of a highly skilled nature were expended, not only in identifying and specifying that second group but also in developing the automatic correction system. For the 1971 Census, though greater enthusiasm was shown for automatic correction and some limited imputation for no answers, the bulk of the editing still relied on reference to source documents.

Detailed analysis of the 1971 Census editing made us question the very philosophy of qualitative editing, in particular automatic correction and imputation. Faced with the reality that a certain level of undetected error will remain in the data because of respondent error, coding mistakes, and data entry error, we asked ourselves whether the full extent of the editing as performed in 1966 and 1971 was justified, valid, and ethical, particularly automatic “correction” and imputation. We had encountered instances such as those described by Dr. Banister where a “correction” by the computer created two inaccurate answers, and I agree with her views that even an elaborate set of logical procedures, such as that of Fellegi and Holt, does not solve the problem of arbitrary editing rules.

For the 1976 Census automatic correct procedures were abandoned, all edits were declared fatal, and amendment action required reference to source documents. More attention was devoted to reducing those errors that could never be detected by an editing system by means of a tight quality control over all clerical coding operations and in the transcription of data items from source documents to optical-mark-readable forms. Though many of the errors detected by the quality control system would have been detected by the fatal edits applied by computer, the detection prior to the editing phase not only reduced the postedit incidence of manual reference to source documents but provided a continual feedback to the source of the error (the coder or transcriber). Retraining (particularly in relation to systematic errors) reduced the incidence of errors thereafter.

The imputation for nonresponse in 1976 was again limited to very basic items such as sex, age, marital status, and labor force/employment status, with each field subject to imputation “flagged” in order that the incidence of nonresponse to such items would not be destroyed. Other questions with no response were coded and tabulated as “not stated.”

The use of editing and imputation for our 1981 Census will follow the philosophy adopted for 1976. We now have a policy with regard to imputation that reads: “Imputation for nonresponse to individual questions or for the number of persons in a household will be applied only when there is a firm basis for such an imputation and the utility of the statistics to users will be improved by such imputation.” Under this policy, dwellings that are reported as apparently occupied but for which there are no supporting details as to the number of occupants will no longer have a number of occupants imputed. This

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"... the attention devoted to editing and imputation has diverted attention from the more important but difficult area of quality of response."
population will be included as part of the underenumeration measured by the postenumeration survey. Conversely, instances where a dwelling is reported as being occupied by, say, a family of two adults and two children but no census form was returned will have four persons imputed and only those basic items discussed above.

The measurement of the Aboriginal population is important in Australia, and we have evidence that the question we ask is misunderstood by many persons born overseas who describe their children as “aboriginal” because they wish to regard them as “Australian.” An edit has been introduced so that in most cases a person whose parents were both born overseas will have racial origin amended from either “not stated” or “Aboriginal” to “other origin.” We feel that under this policy we can justify in statistical terms the action we are adopting and are no longer concerned with being cosmeticians “on behalf of users.”

Elaborate editing and imputation systems produce a pretense that all is well and that the statistics can be used with absolute confidence. Qualitative editing in the population census must be kept in its true perspective, for any individual record has a negligible effect on the quality and usefulness of the final statistics, a position quite different to that of economic census data, for which quantitative arithmetical editing can, to a degree, be justified.

Far more important in census processing are systematic errors and those errors of a reporting nature, which should be detected by a good quality control system. In our view, the correction of random errors, whatever the source of the error, is expensive and of little statistical benefit. The correction of systematic errors needs careful consideration. Those due to clerical and data entry operations should be detected by quality control so that corrective action can be taken to reduce the incidence to acceptable limits. Those due to reporting, whether as nonresponse or inconsistent replies, do not always lend themselves to “hot-deck” imputation methods, as the group of respondents needing imputation are most likely to be a biased group.

In the population census there are innumerable opportunities for errors to find their way into the final statistics. Much of the efforts of statisticians has been directed toward the goal of using editing and imputation procedures to eliminate or at least reduce to tolerable limits the errors that do occur. With the application of computers to census processing there was an understandable desire to use technology to its limit in the area of editing and imputation. As the census budget continues to escalate, we see a rising proportion of that budget consumed by editing and imputation. To what extent there is a real increase in the usefulness of the results from a user's perspective I invite comments from Census Forum readers. I believe, however, that the attention devoted to editing and imputation has been disproportionate to its value and has diverted attention from the more important but difficult area of quality and level of response.

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Historian Looks at Census Editing
I am an historian whose field of research is the history of the United States Census—particularly the population census. I have been working on the development of the editing and tabulating procedures in the census (primarily before 1940) and found Dr. Judith Banister's article on the more recent processes excellent. I share her concern that current editing procedures introduce serious errors into the data, and I would add that even the older manual procedures used in the pre-1950 censuses introduced errors that current users are not aware of. I have found evidence that answers were checked for "consistency" as far back as the 1890 Census! My concern as an historian is with the cumulative effect of such editing, since it is a process that cannot be stopped without making the data seriously incomparable with prior censuses.

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Some Thoughts on Computer Allocation Techniques
I read with great interest Dr. Banister's article on census editing and imputation, and I am in complete agreement with the position that the existence of good computer allocation techniques should never serve as an excuse for accepting incomplete and inconsistent data. We must always remember the old adage: GIGO—Garbage in, garbage out.

Dr. Banister says that the absence of discussion between the producers and users of census data has left the important editing decisions to the technically competent experts (p. 18). This is not necessarily the case. I have worked on edit programs with demographers and analysts in a number of countries. In every case I submitted statements on how the various items might be edited and imputed with the computer program. The decision on the approach to be used was always made by the analysts. Then I worked with the technical experts in implementing the program.

I agree that the application of edit rules should not be used to reject improbable cases, but I feel that they should be used to reject impossible cases, such as a three-year-old parent of head.

The obvious alternative to the use of allocation is to show a "not reported" category. In most cases when this is done, the user assumes that the "not reported" cases are distributed in the same manner as the reported cases. In the case of children ever born, for example, it would be possible to assign the same fertility to a woman as that reported by a nearby woman of the same age and race. If fertility varies with age and race, the variance between the actual and imputed fertility would be less than the variance we would obtain by assuming that all not reported cases were distributed in the same manner as the reported cases.

Most computer edit packages are able to insert in the output record an indication of variables that are shown as reported and those that were created by the allocation process. It requires only one bit to identify each variable so created. It might not be feasible to include in this item the flag of cases of (continued on page 16)
PUBLICATIONS THAT COUNT

by Alice D. Harris

Texas Bibliography II

Censuses constitute one of the major data sources for demographers, government officials, and economists. Most countries—developed and developing—have recognized the importance of regular censuses, and they have proliferated in number, variety, and size in the last three decades. Census reports are bulky, expensive, and hard to acquire, so many large libraries and research centers have been unable to purchase them fast enough to keep up with the research needs of social scientists. This has created the demand for a current listing of all available censuses and where they can be located.

In 1962, the University of Texas Population Research Center received a large grant to begin a comprehensive census library for research purposes. In the process of trying to locate and order censuses from all over the world, the Center staff realized how valuable a catalog of census publications would be. Since none existed, they undertook the work themselves. The result was the six-volume *International Census Bibliography* that appeared in 1965. The “Texas Bibliography,” as it was called, was compiled from the holdings of several major libraries such as the Bureau of the Census Library, New York Public Library, and the Library of Congress. It listed all known censuses of any country that had taken an official census. One supplementary volume was published before the initial funding ran out.

Several years passed before the Population Research Center was able to secure a grant to enable them to resume the project. In the meantime, censuses were still being purchased so that by 1975 the Population Research Center owned reports of 75 percent of all censuses ever taken. By 1978 their holdings were up to 80 percent. Items before 1960 were purchased in microform; for the 1960 round of censuses until the current year, the censuses were purchased in book format.

Ms. Doreen Goyer, Librarian at the Population Research Center, received a five-year grant from the National Institute for Child Health and Human Development (NICHD) to undertake the arduous task of expanding and revising the 1965 bibliography to cover the period 1945–1977. The Herculean efforts of Ms. Goyer and her assistants included visiting libraries in many different locales in order to examine all the census publications known to exist somewhere. The results of their efforts have been published as *The International Census Bibliography: Revision and Update, 1945–1977* (New York, Academic Press, 1980; US$39.50; ISBN 0-12294380-5). The informal title, given on the title page, is “Texas Bibliography II.”

Doreen Goyer (left) and Eliane Domschke (right), both from the University of Texas at Austin, are aided by EWPI Resource Materials Specialist Alice Harris in their search for census publications.

Here is a reference book for everyone in the field of population, but its value is such that it should be in every major public and university library as well. Where else can one find out whether Burma has ever held a census; what is contained in the 1953 census of Sri Lanka; or where to find a copy of the 1960 Cambodian or the 1971 Australian Census reports? Texas Bibliography II (as it will doubtless be known) is arranged in alphabetical order by the most common name (in English) of each country. Unlike U.N. publications, it does not require you to know the continent to find the country you are seeking. Variant country names are cross-referenced in an appendix. The name and address of the official statistical agency is given for each country. The distribution agency from which to order census publications is also given.

All censuses from 1945 through 1977 for each country are given chronologically by date, then by a breakdown of volumes under each census. Titles of census volumes published in English are printed across the full page; those in a foreign language are printed in that language in the left column with the English equivalent in the right column. All publication information is given where known, including pagination. Subnational volumes receive reduced citations.

Ms. Goyer has included at least one location—and in many cases more than one—for each census volume. This should enable users to find the library nearest them that has the material. The book is not a union list of census publications; its primary purpose is to help the census user locate at least one source. Ms. Goyer has also completed a companion volume, *National Population Censuses 1945–1976: Some Holding Libraries* (Clarion, Pa.: APLIC, 1979), which lists 54 libraries in the United States that have all or some of the census publications for any country.

I have devoted so much space to the Texas Bibliography because it is such a valuable reference tool for all those who work

Alice Harris is Resource Materials Specialist at the East-West Population Institute. She and her staff maintain the Institute’s collection of documentation and reference materials, including a stable body of census publications. Readers and publishers who have new publications of interest to the readers of the Census Forum may send review copies to Ms. Harris at the Resource Materials Collection, East-West Population Institute, 1777 East-West Road, Honolulu, Hawaii 96848.
with census materials, from librarians to statisticians. It is comprehensive and well organized, and I hope we will see a supplement after the 1980 round of censuses has been completed. The editor admits that the book has some errors, but adds in her preface, "I console myself with the fact that no nation in the world has ever had a perfect census either."

New Book Reports on Indonesian Population Research

Indonesia can expect a population of more than 225 million by the year 2000 despite the continuing successes recorded in its national family planning program. This is one of the major observations in Population Growth of Indonesia: An Analysis of Fertility and Mortality Based on the 1971 Population Census. The 123-page monograph reports results of a collaborative research project of the East-West Population Institute and the Indonesian Central Bureau of Statistics. The book, recently published by the University Press of Hawaii as one of the monographs of the Center for Southeast Asian Studies, Kyoto University, analyzes fertility and mortality data from Indonesia's 1971 Population Census. Data are presented at the regency level, allowing the comparison and examination of differing patterns of growth. "In a country as heterogeneous as Indonesia in culture and economy," say authors Lee-Jay Cho, Sam Suharto, Geoffrey McNicol, and S.G. Made Mamas, "regional variation in demographic behavior warrants close attention." Any areas showing fertility decline are particularly important, for Indonesia is the world's third most populous developing nation, with 140 million people and an annual growth rate of 2 percent. The average total fertility rate was 5.6 in the 1960s decade.

The monograph may be purchased from the University Press of Hawaii, 2846 Kolewalu St., Honolulu, Hawaii 96822, for US$14.00 hardcover (ISBN-0-8248-0691-3) or US$8.00 paperback (ISBN-0-8248-0696-4).

Letters to the Forum (continued from page 14)

"feedback" edit, and one might wish to exclude from this flag the cases of redundant imputation. With the inclusion of this item it is possible to show how the distribution would differ if imputed entry had been changed to "not reported." The possibility may be carried further by flagging separately the cases where the information was obtained by redundant imputation, semi-informed imputation, and blind imputation. The additional cost of this added data is relatively small. The available information may be carried another step further by including in the output the reported value of the item as well as the imputed value. With this addition it is possible to show the content of the tabulation if no modification had been made. Of course, this expansion would require additional space on the output record. The basic and final age item might require two digits, the flag to designate the existence and type of allocation one digit, and the original value for cases that have been allocated an additional two digits, for a total of five digits. In actual practice it might be decided to show this full detail for only a few selected items like age, relation to head, and education and lesser detail for other items.

In one of her recommendations, Dr. Banister proposes the retention of a census data tape with the data in the form in which they were originally entered. The objective of this proposal is excellent, but this may not be the best way to determine the impact of the imputations. Every edit program includes a diary which shows the number and type of faults in each work unit. When the number is excessive, the work unit will be reexamined; in many cases it will be found that the problem results from errors in coding the data or in transferring the data to the computer tape. In such cases the data will be reprocessed, and the original tape will be discarded and should not be considered in the analysis of the impact of the edit. Thus, if the unedited tape is retained, we must be able to identify the work lots that have been reprocessed. It would be better to expand the content of the output to include an indication of the original content of the variables and the type of imputation that has been performed. If it is unduly burdensome to use this expanded tape in all later operations, a condensed version might be prepared for use in most of the operations.

When imputation has been used, I urge that many, if not all, tables include a count of the number of imputed cases distributed by the other variables included in the tabulation. This would require no more additional space than the inclusion of a "not reported" category. With this approach, for example, the user of a table on children ever born could see the figures on imputation by age, race, and region.

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Readers are invited to share their comments and opinions about census topics. Please address letters to Managing Editor, Asian and Pacific Census Forum, East-West Population Institute, 1777 East-West Road, Honolulu, Hawaii 96848, USA.

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THE EAST-WEST CENTER is a national educational institution established in Hawaii by the U.S. Congress in 1960 to promote better relations and understanding between the United States and the nations of Asia and the Pacific through cooperative study, training, and research. Each year more than 1,500 men and women from many nations and cultures work together in problem-oriented institutes or on "open" grants as they seek solutions to problems of mutual consequence to East and West. For each Center participant from the United States, two participants are sought from the Asian and Pacific area. The U.S. Congress provides basic funding for programs and a variety of awards; and the Center is administered by a public, nonprofit corporation with an international Board of Governors.

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