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Implications of Various Family-Size Averages in the Philippines

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One of the primary objectives of any effort to reduce population growth is to convert demographic projections for a nation into meaningful guidelines for individual and family decision making. The average villager or village leader may find it difficult to understand references to age specific fertility rates, total fertility rates, or even birth, death, and growth rates, since some basic arithmetic concepts are involved even in the most simplistic demographic presentations. As a result, population planners are turning more and more to presentations using the net reproduction rate (NRR).

The NRR is the average number of female children born to each woman in the population throughout her full reproductive span. By doubling the NRR we obtain a close approximation of average finished family size. Program administrators should be able to use projections based on the NRR to relate average family size to national population growth. These "simplified" projections should not only be easier for local leaders and the citizenry to understand, but should produce sufficient corollary information to allow them to be used for a variety of purposes to which more traditional projections cannot be so easily adapted.

The figures presented with this note depict graphically the effect of various approximate family-size averages for the Philippines. The projections upon which the figures are based were derived from age and sex data from the 1970 census, and fertility data from the 1968 National Demographic Survey conducted by the Bureau of the Census and Statistics and the University of the Philippines Population Institute. Longevity and death-rate adjustments were based on past Philippine trends. Data processing and printout were accomplished by the U.S. Bureau of the Census, International Demographic Statistics Center.

The attached figures could be used to give

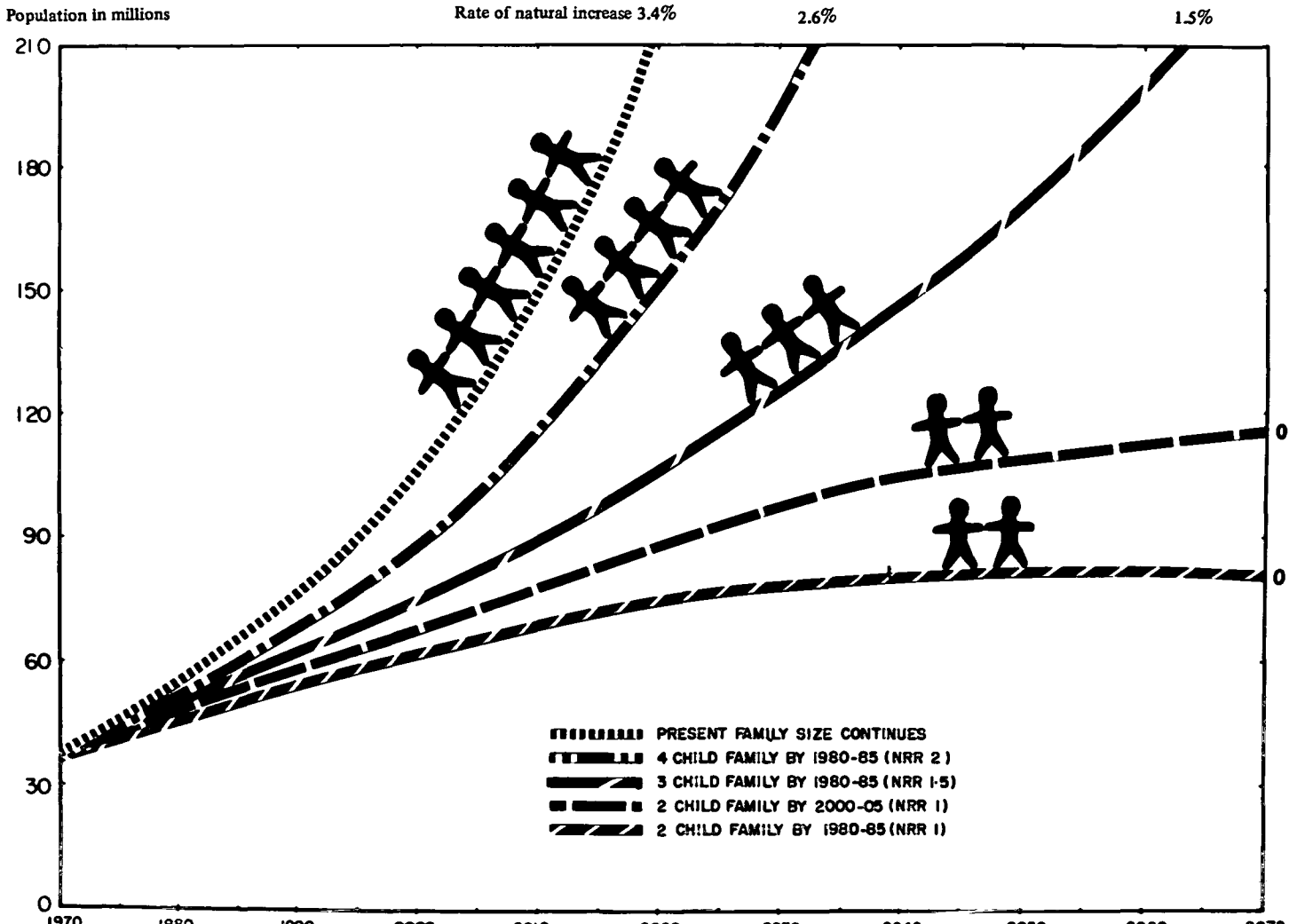

Fig. 1 – Philippines-projected population size under varying fertility assumptions 1970–2070.

some indication of the implications of various family size averages for Philippine population growth. For instance, if the present average number of children born per couple continues, by the time a baby born today is 48 years old the population of the Philippines will equal 210 million, which is the present population of the U.S. (Fig. 1, top line). In other words, if no change is made in family size, the Philippine population will within the lifetime of today's youngsters be over five times as large as it is today. The average number of Filipinos per hectare of land is already over five times as high as that of the United States. By the year 2020 Philippine crowding would exceed the present-day density of Bangladesh, the states of West Bengal and Calcutta in India, or the several provinces which form the heartland of China. The population would still be growing at a rate of about 3.4 percent per year.

If the Philippines were able quickly to reduce average family size to about four children, the growth of the population would be reduced only slightly (Fig. 1, second line). In fact, the Philippines would still attain the present population of the U.S. within the lifetime of today's children, in only 61 years. At that time new people would be added to the population at the rate of about 5 million per year, and the economy would need to provide almost 5 million new jobs each year just to employ new laborers. The population growth rate would be down from the present 3.01 percent to about 2.6 percent.

If, on the other hand, the three-child family becomes the norm, a good deal more time is gained, and the population of the country would grow at a less rapid rate for the next century (Fig. 1, third line). However, an average of three children per family would still not "solve" the population problem. Even with this greatly reduced family size, the production of food would have to increase 500 percent in 100 years just to maintain present consumption standards. There would be important implications for land use, urban growth, employment, adjustments to overcrowding, and other problems of high population density. The growth rate at that time would be about 1.5 percent per year, a considerable reduction from current levels but still far from current European, Japanese, and North American rates which are virtually all below one percent.

If the Philippines were to adopt the two-child family as a national ideal, and if it were possible to quickly convince the great majority of young couples to have only two children, the Philippine population would still double to 80 million before it achieved a rate of zero population growth (ZPG) (Fig. 1, bottom line). This continued growth is due to the "age structure" of the Philippine population. If we draw the present population of the Philippines on a piece of graph paper we find that it looks very much like a pyramid, with a broad base of young people and a narrow top layer of old people (Figs. 2 and 3). Because there are so many young people who will be moving upward in this pyramid (growing older in other words), even if each young couple had only two children, their numbers are so large that the population would eventually double.

If the Philippines waits for 20 additional years before adopting the two-child average the population will triple to 120 million before it stops growing (Fig. 1, fourth line). In general, if every woman had only about two children, after an initial leveling off period, each generation would just replace itself. When we subtract those people who choose not to marry, and those who cannot have children as well as adjusting for mortality, we find that about 15 percent of couples could have three children without causing the population to grow. If this "replacement fertility" were achieved in the period 1980–1985, the structure of the Philippine population would be far different from that obtained with three or four child averages (Fig. 2). Instead of having a pyramidal structure with growing numbers of children and a high proportion of dependents to potential workers (top row), there would be a columnar structure with a lower "dependency burden" (bottom row). In other words, not only would the number of dependents be smaller, but their share in the total population would be substantially reduced.

Fig. 3 presents comparable population pyra-

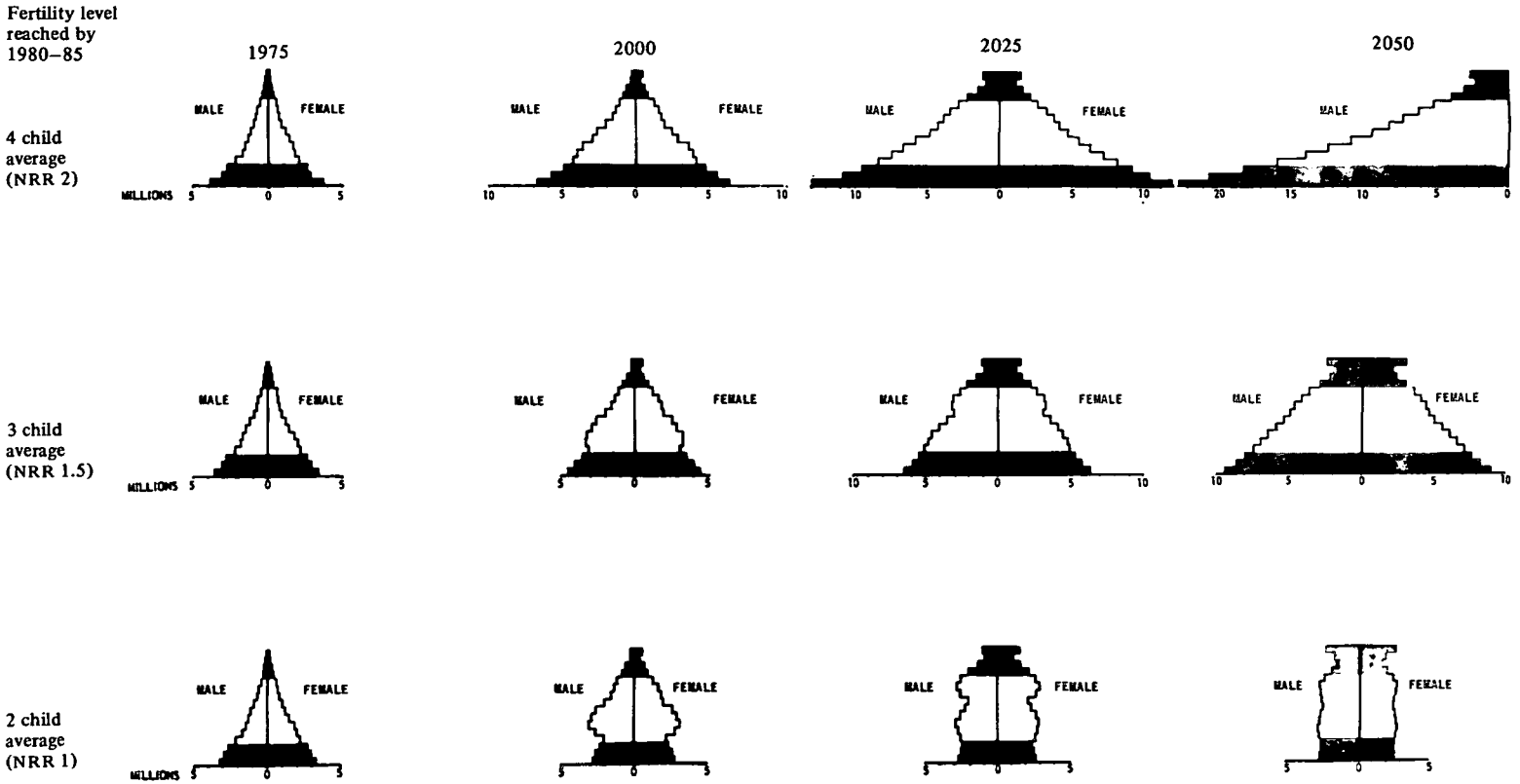

Fig. 2 – Population structure for period 1975–2050 assuming various family size averages are reached by 1980–85 (absolute numbers; five-year age groups beginning with 0–4 years)

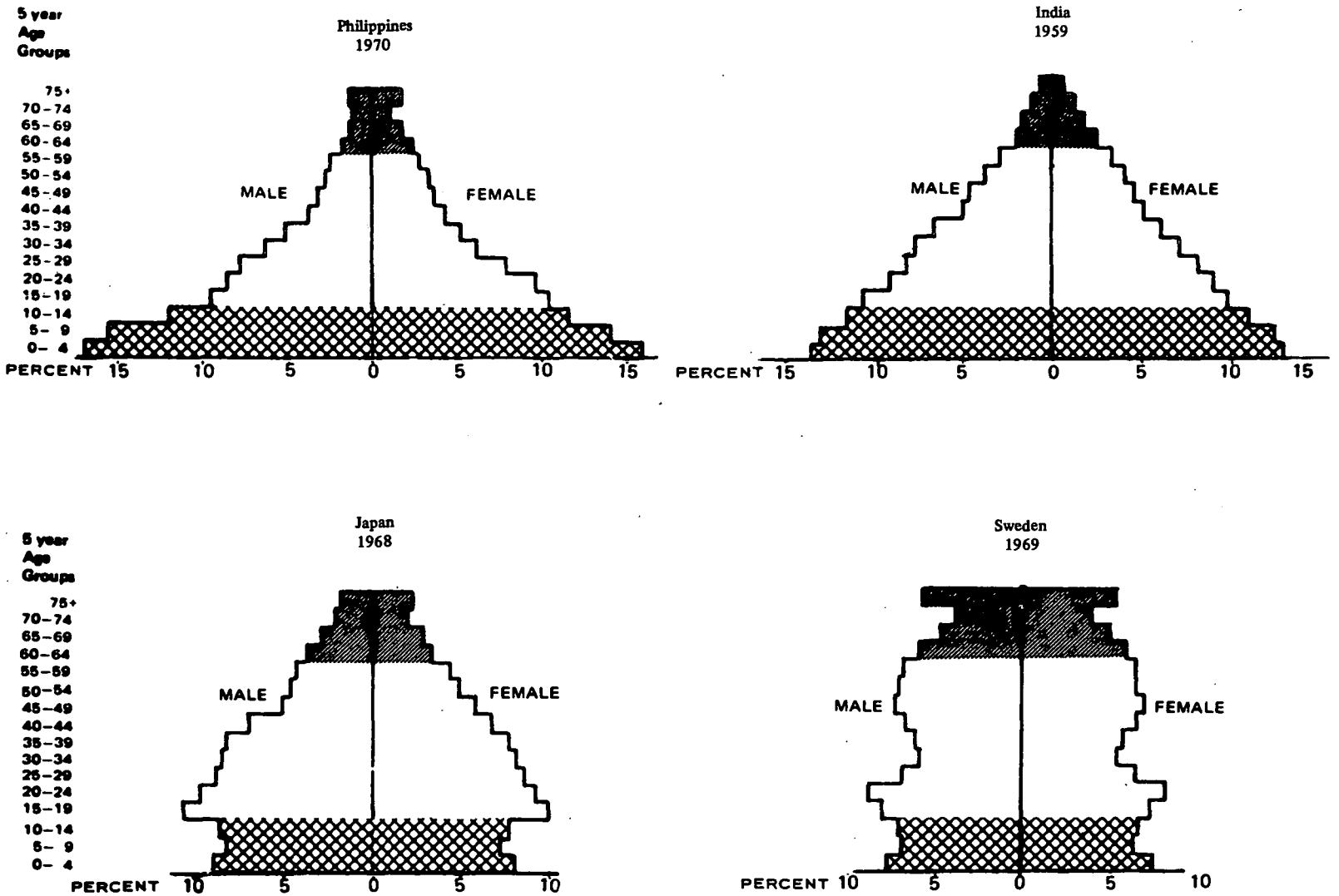

Fig. 3 – Typical population structures

mids for representative countries. It can be seen that the population structure of a persistent four-child average more closely approximates the structure of India. That of the two-child family is more similar to Japan in the short run or to Sweden over the long term.

Note

The author received the M.P.H. in health education from the University of California at Berkeley in 1970. When he submitted this research note he was a research advisor in population to USAID/Manila.

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