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FOREWORD

At its sixth session, in 1951, the Population Commission, having taken note of a project undertaken by the Social Commission on the social implications of the problems raised by the aging of populations, invited the Secretary-General to undertake a more general study of those problems, including their biological, economic and social aspects (E/1989, paragraph 21). It was understood that the study would be conducted in collaboration with the specialized agencies concerned, in order to avoid overlapping.

In accordance with this principle, it was apparent from the outset that the employment of older persons was a matter within the competence of the International Labour Office. The question is studied in a recent publication[1] of the International Labour Organisation and this aspect of the problem has therefore been omitted from the present report. For similar reasons, biological aging has also not been considered. The World Health Organization is better qualified to study the medical questions involved in the study of aging from this point of view.

In order to comply with the Commission's wish that the problems of aging should be dealt with in a very general manner, considerable space has been devoted to the economic and social implications of aging. For the same reason reference is made to the economic and social implications of aging in the title of the report.

The foregoing explains the plan adopted in the report, which comprises three main parts dealing respectively with the facts, the causes and the consequences. A short chapter introduces the study while future trends are discussed in another equally brief chapter.

The Appendix contains bilingual tables which provide important material on the age composition of the present population of seventy countries and on the changes in the age composition of the population of twenty-six countries over as long a period as possible.

[1] International Labour Organisation, *The Age of Retirement*. European Regional Conference, 1955, report IV, annex 147, 13 December 1954.

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INTRODUCTION

The notion of individual aging is very clear and completely unambiguous. An individual ages if his chronological age increases and all the phenomena occurring in the course of this increase are comprised in the term "aging". Some are purely physiological and their study is the subject of the special branch of medicine called geriatrics. However, others affect the individual's activity in various fields: his economic activity, his consumption of foodstuffs, the way in which he attains the share of the national income he needs for his subsistence, his social behaviour, his psychology, etc. The aging of human populations is a much more complex notion.

Difficulties of definition

Let us assume that in two populations, A and B, having the same number of inhabitants it is possible to pair off the inhabitants in such a manner that in each pair the inhabitant of B is older than the inhabitant of A.[1] It can then naturally be said that population B is older than population A and, if A and B are two states of the same population, one can say that the population ages in passing from state A to state B. This is a different notion. Individual aging is a phenomenon which extends throughout life: a four-year-old child ages in the same way as a sixty-year-old person. In ordinary parlance, however, the meaning of the word "aged" is somewhat different from the meaning directly derived from the verb "to age". Society recognizes that after a certain age, which varies according to time, place and customs, an individual becomes an "aged" person. If the proportion of aged persons in the population increases, it can therefore be said that the population is aging. Here, however, aging is used in a different sense. Aging, in the sense used earlier, affected the whole population and was total, whereas aging in the second sense affects only the apex of the age pyramid. It in no way prejudges any structural changes which may occur at the base or in the middle of the pyramid. If the word "aged" provides a basis for defining the aging of a population, the word "young" gives a clue to the definition of rejuvenation and it is important to verify that the two definitions are not contradictory.

In the previous paragraph, it was said that a population ages when the proportion of *aged persons increases*. It is therefore natural to say that a population grows younger when the proportion of *aged persons declines*, but it can also be said that it grows younger when the proportion of *young persons increases*. The contradiction is evident: aging and rejuvenation can take place simultaneously. The term "aging of a population" is therefore inexact and must be qualified. In the case considered at the beginning, to denote the fact that all the inhabitants of population B are older than those of population A, the aging may be described as total. In the second case, if the proportion of aged persons increases, it may be described as aging at the apex. If, on the contrary, the proportion of young persons decreases, it can be described as aging from the base. Accordingly, the term "aging of a population", qualified, if necessary, by "from the base" or "at the apex", always refers to changes in the age structure of the population, and has no other meaning. Many errors of interpretation will be avoided if this definition is kept constantly in mind.

A. Changes in the age structure of populations

1. *The facts*

Chapter I of this report is concerned with changes in the age structure of populations. It contains material on the changes of age structure since the earliest censuses. One fact that emerges is that in the greater part of the world, the age structure of populations has undergone little change. This is particularly true of the economically under-developed countries or, rather, of all countries with a high fertility. Only in the economically-advanced countries has the age structure been changed over the years, by aging from the base and at the apex, a phenomenon whose appearance has more or less coincided with the decline of fertility observed in those countries. The coincidence of declining fertility and aging and the stability of age structure in countries with high fertility suggest that fertility movements have played a fundamental part in the development of this aging. Changes in mortality appear to have played only a secondary part.

Material is next given on the effect of migrations. Migrations lead to aging or rejuvenation, depending on the age at which they occur. The phenomenon is particularly important in the case of internal rural-urban migrations. Another differential variation of structure is that between female and male populations; this aspect is also studied.

2. *The causes*

After the facts have been considered, the causes are discussed in a second chapter. The age structure of a population is governed by demographic factors, alone, at least directly. Although it is true that demographic factor themselves are influenced by economic and social conditions, it is through the demographic factors that these influences affect age structure. In other words,

[1] Or the same age as the inhabitant of A, provided that this is not the case for all the inhabitants.

it is only to the extent that economic and social factors cause changes in births, deaths or migrations that they modify the age structure. The demographic conditions are determined if one knows the mortality table, fertility, and migratory movements, three variables which may be regarded as independent, at least within a certain range of variation. Variations in mortality may take place without any change in reproductive behaviour, and *vice versa*. Similarly, the fertility of couples may increase or decline without affecting migratory movements. It is evident, however, that all these variations are independent only within certain limits. If health conditions in a country with high mortality and fertility steadily improve without any change in fertility, there will be an increase in population such that, sooner or later, fertility will decline in turn. Accordingly, it may be said that this decline in fertility is not independent of the decline in mortality. It is easy to conceive of situations in which variations in mortality and fertility would ultimately give rise to migratory movements; however, before the stage is reached at which movements are necessarily interdependent, there will be a period when mortality, fertility and migrations *may* vary independently of one another.[2]

The problem to be solved may therefore be stated as follows : *if two of the three factors are invariable, what effect will the variations of the third have on composition by age?*

3. *Method of analysis*

At this point a special difficulty arises. At a given time, the age composition of a population depends on past as well as current demographic conditions. Accordingly, in order to compare the effects on age composition of two well-defined sets of demographic conditions, we must first eliminate the legacy of the past from the age composition. For example, in order to examine the effects on age composition of the improvement of health conditions, assuming that fertility and migration are invariable, we clearly must first determine the basis of the comparison, i. e., the age composition corresponding to the unimproved health conditions as well as to the fertility and migratory movements which are assumed to be invariable. Here we have to consider the age composition of the stable population corresponding to the initial demographic conditions. Accordingly, the improvement in health conditions whose effects we wish to ascertain will be studied as it would affect this stable population and we will examine the changes in age structure which take place concurrently with the improvement. At the end of the process of improvement, the structure will again be stable. The information furnished by comparison of the original stable structure with the final stable structure will be useful and in many cases sufficient. It will be possible to deduce with reasonable accuracy what occurred in the interval.

The method of comparing stable structures is used in the second chapter on a group of stable populations corresponding to various levels of mortality and fertility. Life expectancy at birth is used as a measure of mortality and the gross reproduction rate as a measure of fertility. The range of the decline in mortality adopted for the calculation of the stable populations corresponds to an increase of expectation of life at birth from twenty to seventy years. The range of changes in fertility is such that the gross reproduction rate varies from 4.0 to 1.0. These figures roughly represent the limits between which human mortality and fertility have hitherto varied. From this point of view, it can therefore be said that an increase in life expectancy at birth from twenty to seventy years and a decline in the gross reproduction rate from 4.0 to 1.0 are comparable variations.

Using stable populations we can isolate the intrinsic effect on age composition of a change in one demographic factor, but the method is not wholly satisfactory. It is undoubtedly interesting to know that starting from an age structure from which all the effects of past development have been eliminated a given decline in mortality produces a given change in age structure. *However, it is even more important to know what effects this reduction of mortality*[3] *has on actual age structure*, i. e. in all its complexity, taking the whole legacy of the past into account. This may be done by comparing projections. The first projection, to be used as the basis of comparison, is calculated on the basis of the original state, keeping the demographic conditions constant. It provides a picture of the variations of age structure as a result of the past evolution of demographic factors. The second projection is calculated on the assumption that health conditions improve immediately. It provides a picture of the variations of the age structure under the combined influence of the past evolution of demographic factors and of the assumed improvement of health conditions. By comparing the two pictures it is possible to measure the effects of this improvement.

Before proceeding to a brief summary of the results, it may be asked whether it is possible to arrive at general conclusions. Theoretically any variation of demographic conditions may be imagined. For example, if one asks what effects the reduction of mortality will have on age structure the question has no solution at the mathematical level. *Everything depends on the way in which mortality declines* and if all possible reductions are considered, all the possible variations of age structure may be obtained. No general conclusion can therefore be reached. This is precisely the case with migratory movements. They may take place at such different ages that their effects on age structure are highly diverse. Migratory movements are therefore disregarded for the time being, and the end of the chapter is limited to a study of the effects of a very special category of migratory movements, international migration.

In the case of mortality and fertility, however, it is absurd to imagine that all variations are possible. Some, in fact, are extremely improbable. In the past, mortality and fertility have always varied according to a more or

[2] This does not mean that the three factors in question cannot be interdependent during this period. The important point for the present purpose is that these factors *may* vary independently of one another.

[3] A reduction of mortality is used solely as an illustration. This naturally applies also to variations in fertility and in migratory movements.

less identical pattern, which may be determined by studying the changes in economically-developed populations during the last two centuries. Accordingly, when we consider the effect of the reduction of mortality or fertility on the age structure of populations, it is understood that the reduction conforms to the pattern which emerges from demographic trends observed over the centuries and which is being shown to be valid for the under-developed countries.

4. *The results*

Within this framework, the results of the two methods whose principle is outlined above are as follows:

(*a*) The reduction of mortality, *as it has occurred historically*, has had little effect on the age structure of populations. It has led to rejuvenation at the base, i. e. an increase in the proportion of young persons, and has left the apex of the pyramid practically unchanged.

(*b*) The reduction of fertility has led to considerable aging, both from the base and at the apex.

(*c*) *Although the reduction of mortality has hitherto led to rejuvenation from the base, aging both from the base and at the apex can now be expected.* Such aging is particularly important where fertility is low and it is in the populations where fertility is low that mortality can be expected, in the near future, to reach levels corresponding to an expectation of life at birth of eighty years and over. These conclusions make it possible to explain present population trends and forecast future trends in the under-developed countries. For the time being, thanks to the advances of medical science and to economic and social development, the under-developed countries are experiencing a reduction of mortality without any decline in fertility. There is thus a rejuvenation from the base, the apex of the pyramid remaining unchanged. It is reasonable to suppose, however, that mortality will not continue to decline indefinitely without leading to a decline in fertility, which will give rise to heavy aging from the base and at the apex. It can therefore be forecast that in the under-developed countries a phase of rejuvenation will be followed by a phase of heavy aging. A process of this kind is now occurring in Japan.

5. *The illusion of stationary populations*

These results will no doubt surprise those who are unfamiliar with recent developments in demography. Modifications of the structure of populations are frequently attributed to the reduction of mortality, whereas the analysis in this report leads to an opposite conclusion. This occurs because of failure to verify that the conditions defined above are satisfied, i. e., to verify that the comparison is of populations in which *a single* demographic factor is not the same. In this connexion, it is wholly misleading to compare stationary populations, as is so frequently done. As natality and mortality are by definition in equilibrium in stationary populations, reproductive behaviour must necessarily be different in two stationary populations having different levels of mortality. The observed differences in age structure cannot therefore be attributed solely to differences in mortality and no conclusions can be drawn from such comparisons. The fact that the demographer, unlike the physicist or chemist, must conduct his experiments on paper instead of in the laboratory probably explains why the effect of variations of mortality on age structure is so often studied by comparing stationary populations. If the demographer could experiment with real instead of imaginary populations, he would realize that if mortality is changed, the reproductive behaviour of his populations must change completely. If in order to carry out an experiment, a physicist had continually to vary a factor which, in accordance with the definition of the phenomenon he wished to measure, had to be constant, he would reject the experiment. A demographer who set out to study the effects of a reduction of mortality on age structure by considering a real population in a number of stationary states would do the same. In practice, however, the demographer in this case merely imagines real populations. His reasoning is abstract and he cannot rely on the experimental verification which ensures that the physicist does not depart from the facts. In the case in point, this absence of verification may lead him to completely erroneous conclusions.

6. *Interdependence of variations of fertility and mortality*

Nevertheless, as was noted earlier, mortality and fertility can vary independently of each other only within certain limits. We must, in particular, consider how a reduction of mortality ultimately leads to a decline in fertility. If fertility is constant, the reduction of mortality leads to an appreciable increase in the proportion of young people. This increase brings with it an increase in the youth dependency burden, which is felt directly by the family and may be regarded as too heavy to be borne, thus giving rise to a reduction in the size of families. However, the figures obtained by using the stable population method minimize this phenomenon for two reasons:

1. It is notoriously difficult to measure reproductive behaviour, and the gross reproduction rate used here is not the best index that could be chosen. In particular, the same gross reproduction rate does not correspond exactly to the same reproductive behaviour depending on the mortality with which it is associated. With a high mortality family building is stopped by the early death of one of the spouses in many more cases than with low mortality. In a population where mortality is high the families which survive must have more children than in a population where mortality is low if the average gross reproduction rate is to be the same in both populations. In other words, if the calculations were made on the basis of constant reproduction behaviour instead of a constant gross reproduction rate (which does not mean that reproduction behaviour is constant), it would be found that a reduction of mortality produces a greater degree of rejuvenation than is suggested by calculations based on a constant gross reproduction rate.

2. All the children of the same family cannot be placed on the same footing. A child begins by being dependent on his parents and then contributes to the family income when he begins to work. The aggregate dependency burden represented by the children of one family increases, reaches a peak, is reduced to zero and finally becomes

negative. Obviously the family's behaviour will not be governed by the average dependency burden but by the maximum burden, in the light of which it will decide whether it can have more children or not.

In order to eliminate these two disturbing effects as far as possible, two theoretical models of family building have been constructed so that the maximum child dependency burden can be estimated. The first roughly corresponds to conditions in the under-developed countries and the second to conditions in the developed countries. They show that the maximum burden in the developed countries is always higher than that in the under-developed countries (the longer period of education more than offsets the reduction of dependency due to the decline in fertility). However, the same dependency burden does not have the same incidence in a population in which vital needs are satisfied as in one in which they are not. Accordingly, it cannot be concluded that an increase of the dependency burden in under-developed countries (e. g., as a result of the reduction of mortality) will not lead to a decline in fertility. It would seem, however, that this eventuality is not as probable as some writers believe.

B. The implications of the aging of populations

Chapter II of the study deals with the implications of demographic aging. An example will serve to illustrate these implications. It is a matter of common knowledge that the economic activity of individuals varies with their age. In a population of a given age structure the economic activity of individuals determines the labour supply of the population concerned. Other things being equal, if the age structure is changed, i. e., if demographic aging or rejuvenation occurs, the labour supply will also change, giving rise to economic problems which may readily be imagined. The example shows that demographic aging or rejuvenation affects the over-all working capacity of the population because there is an individual characteristic, economic activity, which varies with age. The complex of individual characteristics which vary with age constitutes what is known as individual aging and the consequences of demographic aging can be seen as a transposition of the phenomena of individual aging to the population level through variations of age structure.

It may be useful to consider how this transposition occurs. For every individual characteristic there is a corresponding age function which expresses the way in which the individual ages on the average with reference to the particular aspect under consideration. In the case considered above (economic activity), this function is represented by the aggregate of the age-specific activity rates, i. e., the proportion of all the persons of a given age who are economically active. This function may be called the attitude or behaviour function and if a graph is drawn the curve may be referred to as an attitude or behaviour curve.

A "measure" of the phenomenon of aging corresponding to a given behaviour function may be obtained by multiplying each component of age structure by the corresponding value of this behaviour function. In the case considered above, the number of workers is obtained by multiplying the number of persons in each age group by the corresponding activity rate. The way in which this number of workers varies as the age structure is modified constitutes the effect of demographic aging on labour supply.

However, similar phenomena may be observed when the behaviour function changes, as well as when the age structure is modified. In the example considered, a lowering of the retirement age, i. e., a change in the behaviour function with reference to economic activity, would have an effect on the labour supply similar to that of demographic aging at the apex of the pyramid.

The phenomena of individual aging change continually. As a result of medical progress and economic and social development, people today do not "age" in the same way as earlier generations. In practice, the effects of demographic aging are therefore intricately mixed with those of modifications of the various processes of individual aging and, as these effects are similar in character it is difficult to distinguish between them. The distinction must, however, be made.

In the first place, as the causes differ in the two cases, the means of action available are not the same. Demographic aging involves considerable forces resulting from demographic trends which often cannot easily be influenced. In the majority of cases, demographic aging is therefore a phenomenon that must be accepted as it is, whereas the consequences of a change in an individual aging process can sometimes be modified without difficulty, e. g., by taking very simple administrative measures.

Moreover, the effects of demographic aging are felt simultaneously in many directions, while changes in individual aging generally affect only one specific phenomenon.

Further, by definition the consequences of demographic aging make themselves felt only where the age structure is modified, whereas changes in individual aging occur in all populations. Chapter I of this report shows that, if we consider only the results already achieved in the effort to reduce mortality, i. e., do not take into account hopes of future medical progress, demographic trends, from the point of view of age structure, can be classified, as a first approximation, in two categories, according to whether fertility is constant or declining. With constant fertility, there is rejuvenation at the base, the apex of the pyramid remaining virtually unchanged. With declining fertility, there is aging—which may be substantial—both from the base and at the apex. Most under-developed countries belong to the first category and other countries to the second. In practice therefore demographic aging at present occurs only in the economically developed countries. It affects economically under-developed countries only to the extent to which their fertility declines. The consequences of changes in individual aging processes, on the contrary, affect all countries at all times. In the case of each of the consequences of demographic aging, it is therefore essential to study the phenomenon of individual aging on which it is based and, in particular, to study the changes which this individual phenomenon undergoes in the course of time.

The problems met with in such a study always arise in more or less the same way. It may therefore be useful to consider in detail a concrete case, that of the housing needs of a population.

It is obvious that housing needs vary with age. They depend mainly on three factors:

(*a*) How families are formed;

(*b*) The organization of family life;

(*c*) The position with regard to the dissolution of marriages.

Study of nuptiality and, more generally, of the various marriage customs, provides data on the first aspect. Fertility and family customs provide data on the second. Mortality and the body of social customs regulating the dissolution of marriage provide data on the third. If all these factors are taken into account, we finally obtain the behaviour function of the population with reference to the problem of housing, in the form of the average number of housing units required for each inhabitant in each age group. Let us call this function (L).

For a population of given age structure (S) the average number of dwelling units required per inhabitant can be obtained by multiplying each value of (L) by the corresponding value (S) and adding the figures obtained. This number will be called (L) $\times$ (S).

However, the proportion of dwelling units per inhabitant is not the most interesting index. The cost of building and maintaining housing is in fact borne by the working population. If (A) is the behaviour function with reference to economic activity, the product (A) $\times$ (S)[4] will represent the averag enumber of workers per inhabitant. Finally the quotient:

$$\frac{(\mathrm{L}) \times (\mathrm{S})}{(\mathrm{A}) \times (\mathrm{S})} = m \qquad (1)$$

will represent the number of dwelling units per worker.

m is an index of each worker's share of the cost of housing the population, including the cost of maintenance and replacement. However, housing need problems are not fully solved if these two requirements (replacement and maintenance) are satisfied. New housing must be built to keep pace with population growth. If r is the annual rate of increase, the product

$$mr = \frac{(\mathrm{L}) \times (\mathrm{S})}{(\mathrm{A}) \times (\mathrm{S})} \times r \qquad (2)$$

represents the new housing units to be built per worker per annum.

The effects of demographic aging (or rejuvenation) on expressions (1) and (2) provide a measure of the effects of such aging (or rejuvenation) on housing needs. Expressions (1) and (2) clearly show why changes in the behaviour curves and variations of age structure have similar consequences. Whether it is (L), (A) or (S) that varies, the effect on m is qualitatively the same. In expressions (1) and (2), the structure function seems to be independent of the behaviour function and it may be thought that their respective effects may be easily distinguished. In fact, however, structure is a function of demographic factors and the distinction can be made only if demographic factors do not affect the behaviour function. In very many cases, behaviour functions are affected by demographic factors; this is true of housing needs which have been taken as an example. The reduction of mortality changes the manner in which marriages are dissolved by death and this modifies housing needs. Accordingly, the effect of a change in age structure will differ according to the mortality level at which it takes place. Hospital accommodation needs provide a similar example; they vary both qualitatively and quantitatively according to whether mortality is high or low.

In addition to these examples, where the effects of demographic factors on behaviour are, so to speak, automatic, there are others in which the connexion is not so rigid and depends on the will of individuals. Thus behaviour with reference to economic activity may be related to the fertility level. The decline in fertility may be motivated by a wish to delay the entry of children into the labour force. Economic activity may also be influenced by the mortality level; if health conditions are good it is possible for people to continue to work to an advanced age. Thus in very many cases changes in age structure are not independent of changes in behaviour[5] *and the notion of the consequences of demographic aging becomes meaningless.* It is then more appropriate to speak of the consequences of variations of demographic factors; these consequences include the effects of variations of age structure and of variations of behaviour.

In expression (2), the notion of "the consequences of demographic aging" cannot be used, even where the behaviour considered is independent of demographic factors. These factors influence not only the age structure (S), but also the rate of increase r and it is always the overall effect that is observed.

The chapter dealing with the economic and social implications of demographic aging is divided into three parts. The first deals with the problems of behaviour with reference to economic activity. It has already been pointed out that economic activity is as it were a common denominator in all the problems, as the consequences of demographic aging are always expressed in the form of work to be done or, more accurately, a burden to be borne by producers.

Economic activity is carried on in many fields and the distribution of producers among these fields depends on the needs of individuals. These needs are examined in the second part of the chapter.

However, the goods produced can be consumed only to the extent to which they are made available to consumers. In other words, goods must be appropriately distributed among the various categories of consumers. The manner in which this distribution is made varies

[4] The above is of course a symbolic product. In fact, each value of (S) is multiplied by the corresponding value of (A) and the products are added together.

[5] The behaviour function may even be directly dependent on the age structure itself.

with age. For example, in a market economy, a retired person, a worker and a child, do not receive in the same way the money they require to procure the goods they consume. The various distribution functions are considered in the third part.

The chapter dealing with these three behaviour curves (economic activity, consumption and distribution) does not claim to cover all the economic and social implications of demographic aging. For example, behaviour with reference to savings deserves more extensive consideration. In this report, only a few aspects of the problem are considered in connexion with other questions. Systematic study is hampered by the difficulty also encountered in connexion with other problems—the near-impossibility of obtaining a numerical representation of the behaviour function. It is known that the behaviour of individuals with reference to savings varies with age, but it is not clearly known how it varies, and the extent of the variations is unknown. This impossibility of translating a given aspect of behaviour into figures arises in connexion with every attempt to study the social implications of the aging of the population.

Chapter IV is devoted to the study of future developments in the countries which are in the vanguard o demographic aging, i. e., those with low fertility. In most of these countries, the decline in fertility, which began over a century ago, seems to have halted. It has been shown that the decline in fertility was responsible for demographic aging and it might be expected that demographic aging would now slow down. However, the calculations show that the full effects of the decline in fertility in previous decades have not yet been felt on the age structure of the populations and, although fertility has been stabilized the populations will continue to age for some time. Moreover, although the decline in mortality, in the form in which it has occurred, has caused little change at the apex of the pyramid, there is reason to believe that this will not be the case in the future. If mortality continues to decline in countries where it is already low—and there is every reason to hope this will be so—it will decline particularly in the upper age groups. The rates in the low age groups are now so low that it would be unreasonable to hope for appreciable gains at those ages. The low mortality countries are also those where fertility is low. It follows that in those countries a future decline in mortality will normally result in aging of the population.

Chapter I

TRENDS AND DIFFERENTIALS IN THE AGING OF POPULATIONS

A. Aging trends

Before embarking on the discussion of the causes and the demographic, economic and social implications of the aging of populations it seems desirable to acquaint the reader with some basic facts pertaining to the trends in the age composition of various populations. That is the primary objective of this chapter, which presents statistics and provides comments on: (1) the present age composition of various populations; (2) changes in the age composition of various populations during the last hundred years or so; (3) the differences, present and at periods in the past, in the age composition of some sections of the same population, such as males and females, urban and rural communities, and various ethnic groups.

1. *The material*

The basic data appearing in the appendix consist of: (1) tables showing recent age distributions, in quinquennial age-groups, of populations in about seventy countries; (2) tables showing age and sex distributions of populations in twenty-six countries in the period 1850 to 1950, also in quinquennial age-groups.

Only in a few cases has direct resort been made to census results. Most of the current or recent data were extracted from the United Nations Demographic Yearbooks for the years 1948 to 1954.[1] For the historical series use was made of the following compilations:

J. Bertillon, *Statistique internationale résultant des recensements de la population exécutés dans les divers pays de l'Europe pendant le XIX^e siècle et les époques précédentes*, Paris, 1899;

Annuaire international de Statistique, vol. 1 (1916), III (1919) and V (1921), L'Institut international de statistique;

Le mouvement naturel de la population dans le monde de 1906 à 1936, L'Institut national d'études démographiques, Paris, 1954.

It is necessary to point out that the quality of census data on age varies from one country to another and from one census to another. On the whole the economically developed countries produce better statistics than the less developed ones. The process of economic development is usually parallel to the improvement in the reliability of statistics. This point should be especially borne in mind in connexion with the study of aging, because, as will be seen, the aging process is closely corrrelated with economic development. Furthermore, the inaccuracies in age reporting increase with age and this may result in some distortions in the recorded number of old people. The growth of the Welfare State has given rise to a comparatively new source of inaccuracy, due to a tendency on the part of persons nearing the eligibility age for pensions to overstate their age.

On the whole, however, although the effects that such erroneous information may have on the historical and comparative analyses of changes in age structure should not be forgotten, neither should they be exaggerated. The inaccuracies do not all err in the same direction and some are offset by others.

2. *The present situation*

Before considering past trends in the age composition of populations, it is instructive to examine the current situation and to compare the degree of aging obtaining in various parts of the world of today.

Table 1 provides data on the percentage distribution in three broad age-groups (0-14, 15-64, and 65 and over) of the populations of about seventy countries.[2] In addition the last column shows the ratio of persons above the age of 64 to the number of persons aged 15 to 64.

Firstly, it will be seen that the percentage of old people varies widely from one population to another. The range covered by the countries included in table 1 extends from a minimum of about 1.5 per cent in Togoland and the Gold Coast[3] to a maximum of about 11 per cent in France and Belgium.

Secondly, if populations were to be arbitrarily defined as "young" if they have less than, say, 4 per cent of persons above the age of 64, as "mature" when this percentage is between 4 and 7, and as "aged" when it exceeds 7 per cent, it would appear that an overwhelming proportion of world populations may be regarded as "young" or "mature", and only a very small proportion as "aged". Furthermore, the "aged" countries would comprise only a small proportion of the world's populace and would cover only a small part of the surface of the globe. It follows that the problems of aging of populations are by no means universal but, on the contrary, are at present restricted to a small group of countries.

[1] Latest edition: *Demographic Yearbook, 1955*, United Nations publication (Sales No.: 1955.XIII.6).

[2] The absolute and relative distributions of these populations by quinquennial age-groups are shown in the appendix.

[3] It is likely that the figure of 1.5 per cent is in fact somewhat understated but the error is probably not great. The percentage of old people among the Maoris in New Zealand, for which the data are relatively reliable, is not more than 2.5 per cent.

TABLE 1. — PERCENTAGE DISTRIBUTIONS OF SELECTED POPULATIONS BY THREE BROAD AGE-GROUPS

Date	Source (C = census, E = estimate)	Country	0-14	15-64	65 and over	65 and over / 15-64 × 100
AFRICA						
1948	C	Algeria (Moslems)	43.02	54.28	2.70	5.0
1940	C	Angola	40.41	56.66	2.93	5.2
1946	C	Basutoland (Africans)	37.83	55.91	6.24	11.2
1947	C	Egypt	38.07	58.83	3.10	5.3
1950	E	Gold Coast	36.53	61.95	1.52	2.5
1940	C	Mozambique	43.46	54.30	2.24	4.1
1950	E	Togoland (UK)	35.45	63.09	1.46	2.3
1946	C	Tunisia				
		(Moslems)	41.68	...	...	...
		(Europeans)	29.27	...	...	...
1946	C	Union of South Africa				
		Europeans	30.49	63.33	6.18	9.8
		Non-Europeans	39.52	56.84	3.64	6.4
NORTH AMERICA						
1950	C	Alaska	26.46	69.85	3.69	5.3
1951	C	Canada	30.34	61.91	7.75	12.5
1950	C	Costa Rica	42.87	54.24	2.89	5.3
1943	C	Cuba	36.40	60.26	3.34	5.5
1950	C	Dominican Republic	44.50	52.64	2.86	5.4
1950	C	El Salvador	41.16	55.88	2.96	5.3
1945	C	Greenland	42.65	55.18	2.17	3.9
1950	E	Guatemala	43.63	53.76	2.61	4.9
1950	C	Haiti	38.02	57.98	4.00	6.9
1950	C	Honduras	40.58	55.45	3.97	7.2
1949	E	Jamaica	35.97	60.11	3.92	6.5
1950	C	Mexico	41.78	54.86	3.36	6.1
1950	C	Nicaragua	43.28	53.87	2.85	5.3
1950	C	Puerto Rico	43.12	53.08	3.80	7.2
1950	E	Trinidad and Tobago	39.58	56.31	4.11	7.3
1950	C	USA	27.15	64.67	8.18	12.6
SOUTH AMERICA						
1947	C	Argentina	30.85	65.23	3.92	6.0
1947	E	Bolivia	46.10	...	...	...
1950	C	Brazil	41.86	55.69	2.45	4.4
1946	C	British Guiana	37.72	58.29	3.99	6.9
1948	E	Chile	37.15	59.35	3.50	5.9
1950	C	Colombia	42.01	55.09	2.90	5.3
1950	C	Ecuador	42.46	54.00	3.54	6.6
1950	C	Panama	41.62	55.15	3.23	5.9
1950	C	Paraguay	43.77	52.51	3.72	7.1
1949	E	Peru	42.08	53.60	4.32	8.1
1950	C	Venezuela	41.96	55.38	2.66	4.8
ASIA						
1954	E	Burma	37.42	59.75	2.83	4.7
1947	E	Ceylon	37.15	59.37	3.48	5.9
1950	C	Formosa	41.41	56.09	2.50	4.5
1951	C	India	37.45	58.97	3.58	6.1
1951	E	Israel	30.48	65.52	4.00	6.1
1950	C	Japan	35.42	59.64	4.94	8.3
1950	E	Jordan	44.48	...	...	...
1952	C	South Korea	41.09	55.21	3.70	6.7
1947	C	Malaya	41.29	55.50	3.21	5.8
1951	C	North Borneo	39.50	...	...	...
1948	C	Philippines	44.17	52.68	3.15	6.0
1947	C	Thailand	42.32	55.10	2.58	4.7
1950	C	Turkey	38.04	58.55	3.41	5.8

TABLE 1. — PERCENTAGE DISTRIBUTIONS OF SELECTED POPULATIONS BY THREE BROAD AGE-GROUPS *(continued)*

Date	Source (C = census, E = estimate)	Country	0-14	15-64	65 and over	65 and over / 15-64 × 100
EUROPE						
1951	C	Austria	23.25	66.62	10.13	15.2
1950	E	Belgium	20.91	68.04	11.05	16.2
1945	E	Bulgaria	27.65	...	...	...
1947	C	Czechoslovakia	24.34	68.08	7.58	11.1
1950	C	Denmark	26.34	64.55	9.11	14.1
1950	C	Finland	30.00	68.38	6.62	10.4
1950	E	France	21.72	66.49	11.79	17.7
1950	C	Germany : Federal Republic	23.55	67.17	9.28	13.8
1946	C	Germany : USSR Zone	24.92	65.10	9.98	15.3
1951	C	Great Britain	22.48	66.69	10.83	16.2
1940	C	Greece	32.99	60.70	6.31	10.4
1941	C	Hungary	25.98	67.05	6.97	10.4
1950	C	Iceland	30.85	61.63	7.52	12.2
1951	C	Ireland	28.87	60.44	10.69	17.7
1950	E	Italy	26.34	65.60	8.06	12.3
1951	E	Netherlands	29.48	62.66	7.86	12.5
1950	C	Norway	24.40	65.96	9.64	14.6
1949	E	Poland	28.37	66.55	5.08	7.6
1950	C	Portugal	29.47	63.55	6.98	11.0
1950	C	Spain	26.23	66.54	7.23	10.9
1950	C	Sweden	23.40	66.28	10.32	15.6
1950	C	Switzerland	23.63	66.80	9.57	14.3
1951	E	Yugoslavia	30.82	63.51	5.67	8.9
OCEANIA						
1951	E	Australia	27.06	64.92	8.02	12.4
1951	C	New Zealand (excl. Maoris)	28.38	62.04	9.58	15.4
1951	C	New Zealand (Maoris)	46.49	50.97	2.54	5.0
1939	C	USSR	36.2	59.7 [a]	4.10 [a]	6.9

Source: United Nations, *Demographic Yearbooks*, 1948 to 1954.

[a] Estimate: the 1939 census does not distinguish any group beyond the age of 60.

Thirdly, it appears that the most "aged" populations are those of the economically advanced countries of Western Europe, and those of the United States, Canada and Oceania. Graph 1 will give some idea of the geographical pattern of aging. The white patches indicate the countries for which no recent data are available. The most notable omissions are those of the population of China and of the Soviet Union. The results of various local censuses undertaken in 1940 and the following years make it virtually certain that the Chinese population belongs to the least aged category. [4] There are reasons to believe that the percentage of the old in the Soviet Union is at present in the region of 6 to 8 per cent.

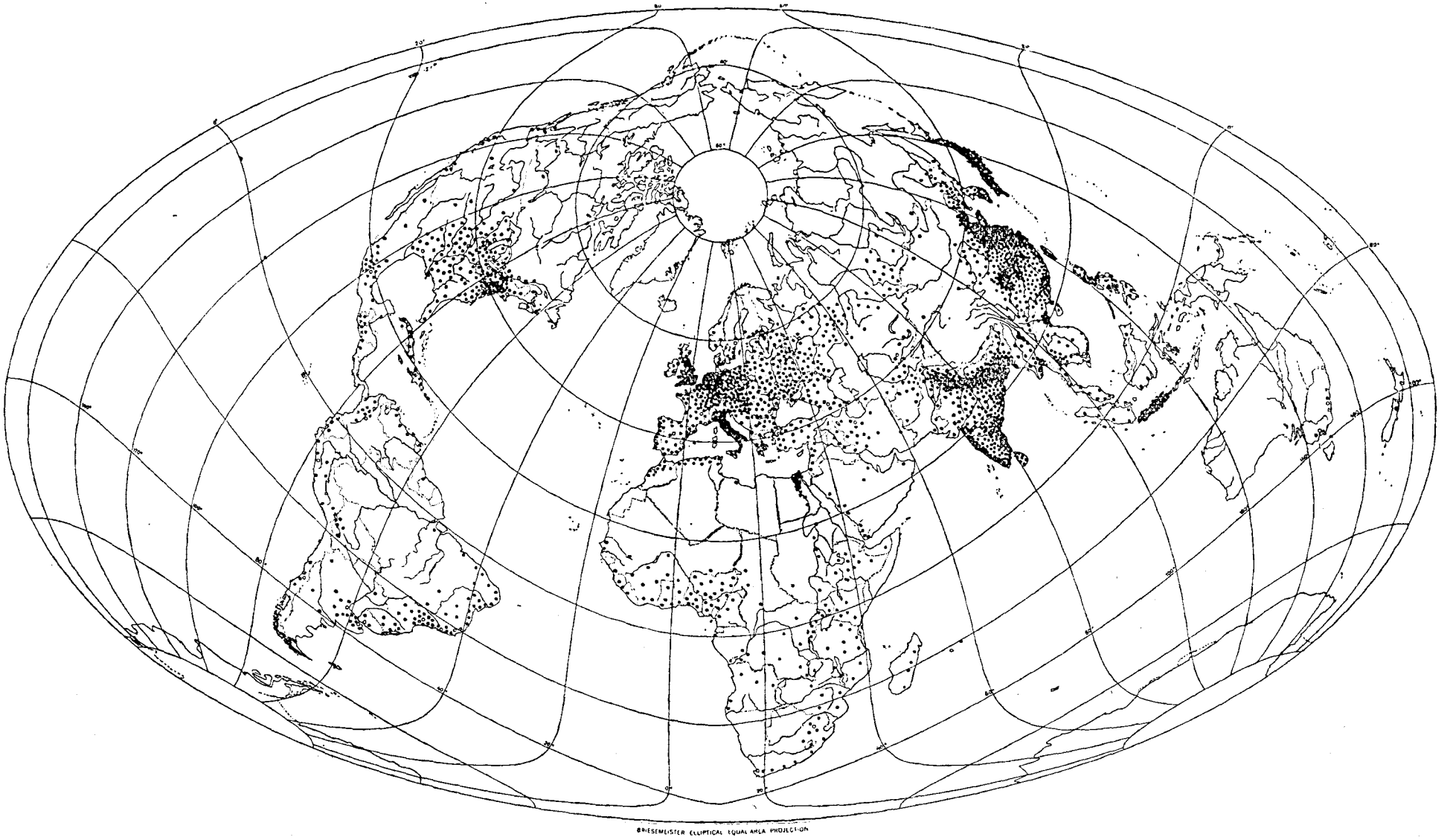
3. *Past trends*

The reader will find in the appendix detailed tables of changes in the age structure of various populations in the period from about 1850 to 1950. An illustration of the changes in the shape of the age pyramid which are associated with the advancement of the aging process is provided in graph 2. The populations of Great Britain, France and Sweden in 1850, 1900 and 1950 have been chosen as examples.

It will be noticed that in the middle of the nineteenth century the three populations were characterized by very regularly shaped age pyramids resting on a wide base. In France, however, the base was already narrower, indicating that in this country the aging process has set in earlierthan in the other two populations. During the second half of the last century comparatively little change occurred, though the percentage of children did decline slightly in all three countries and in Sweden the apex of the pyramid broadened. By 1950 the shape of the pyramids had changed completely, so that each of them resembled a barrel resting on a base rather than a pyramid. Were the immediate pre-world-war situation depicted, the barrel-like structure would be still more evident, since the base widened after the war, as a result of the great increase in the birth-rate. The bulge appearing at the middle age level is characteristic of an aging population. It is reflected in the increased proportion

[4] See Ta Chen, *Population in Modern China*, Chicago, 1946. A census was taken on the Chinese continent in 1953. The only result published on age composition was that of the percentage of people under eighteen years of age: i. e., 41.1. That is a proportion that is always associated with a percentage of less than 8 per cent of people over the age of 64.

GRAPH 1



POPULATION IN 1950

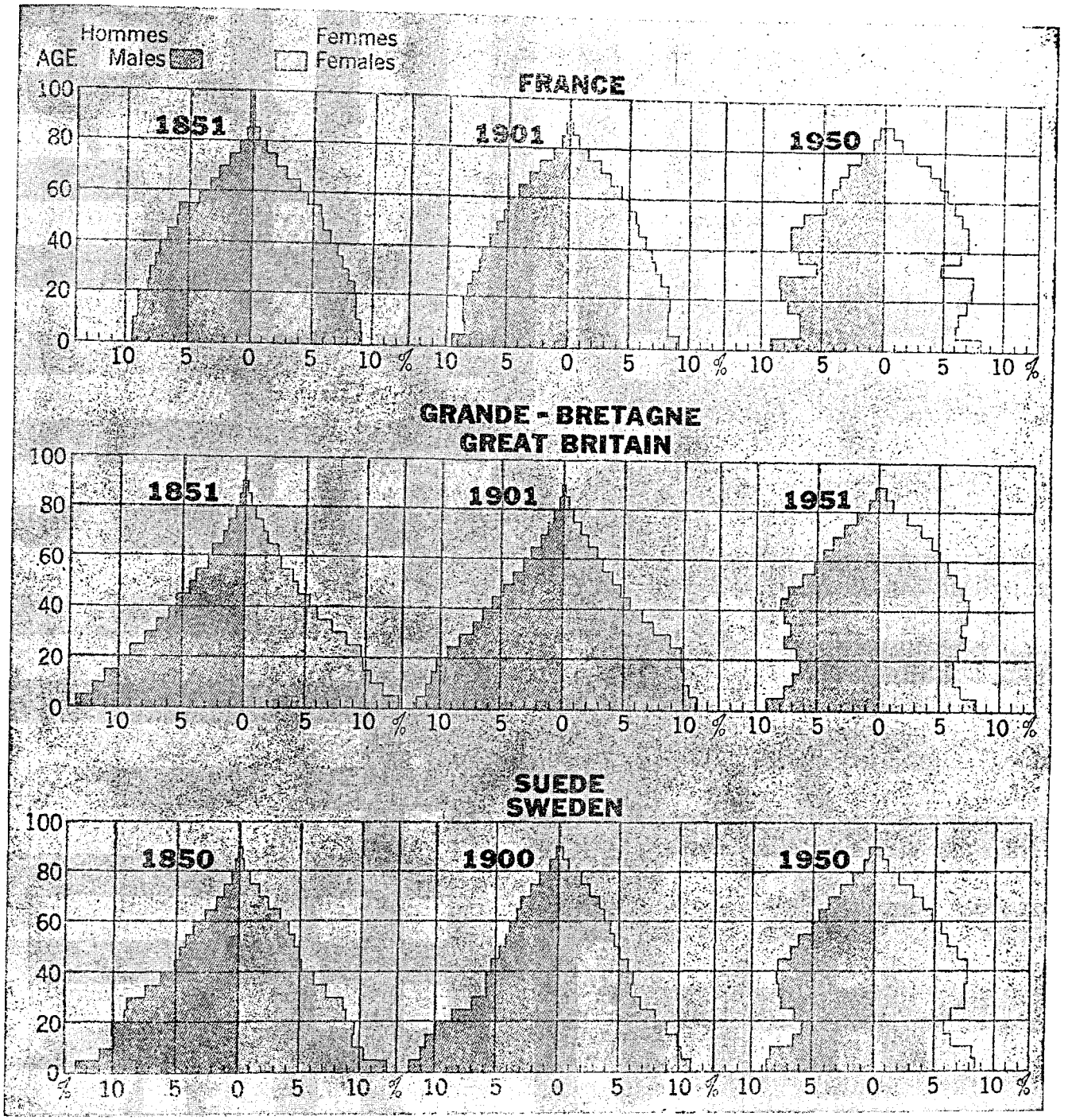
. : 1 million inhabitants

o : Cities of more than 500,000 inhabitants (within the administrative boundary).

Adapted from various yearbooks and from the 1951 Oxford Atlas.

Made by Jacques Bertin for the International Commission for a Scientific and Cultural History of Mankind.

GRAPH 2 .— AGE STRUCTURE OF THE POPULATIONS OF FRANCE, GREAT BRITAIN AND SWEDEN AT VARIOUS PERIODS



adults, as also to an increase in the proportion of the old.

Three tables have been drawn up illustrating trends in the proportion of persons aged 65 and more in the twenty-six countries dealt with in the appendix. Unfortunately only for a few countries are there data available for as far back as the middle of the nineteenth century.

Table 2 shows the actual proportion of old people in relation to the total population in each country at various dates. It will be seen that the populations of Western Europe included about 5 per cent of old people towards the middle of the last century, a substantially higher proportion than that obtaining today among many populations of the world. The degree of aging in France in 1851 is especially impressive (6.5 per cent of the old), above all when it is recalled, for instance, that this figure of persons of working age, which leads eventually to an increase in the ratio of older adults to younger

TABLE 2. — PERCENTAGE OF PERSONS AGED 65 AND OVER OF TOTAL POPULATION IN SELECTED COUNTRIES, 1850-1950

Country	In or about										
	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
AFRICA											
EGYPT	...	...	...	...	...	...	...	...	2.90	3.64	3.10
NORTH AMERICA											
Canada	...	...	...	...	...	5.07	4.66	4.78	5.56	6.67	7.76
USA	...	...	...	...	...	4.07	4.30	4.67	5.41	6.85	8.14
SOUTH AMERICA											
Argentina	...	...	...	...	...	1.95 [a]	2.31	...	...	...	3.94
Brazil	...	...	...	...	...	2.11 [b]	...	...	...	2.40	2.46
Chile	...	...	...	...	...	...	...	3.30	3.41	3.50	...
ASIA											
Ceylon	...	...	...	...	2.03	...	2.30	2.39	...	...	3.45
India	...	...	...	...	...	...	2.39	2.49	2.17	...	3.59 [c]
Japan	...	...	...	...	...	...	...	5.26	4.75	4.71	4.94
EUROPE											
Austria	...	...	3.92	4.39	4.87	4.98	5.27	6.23	6.77	8.81	10.57
Belgium	5.87	5.64	6.33	6.45	6.42	6.18	6.37	6.49	7.59	...	10.69
Bulgaria	...	...	...	...	5.62	5.13	5.34 [d]	5.66	5.21	...	...
Denmark	5.45	5.20	5.81	6.08	6.97	6.66	6.62	6.85	...	7.52 [e]	8.38 [f]
France	6.47	6.89	7.41	8.11	8.28	8.20 [g]	8.36	9.05	9.35	...	11.80 [h]
Germany	...	...	...	4.72	5.10	4.88	5.04	5.77 [i]	7.36	8.86 [j]	9.27 [j]
Greece	...	...	3.63	3.53	3.51	...	4.13	5.66	5.86	6.31	...
Great Britain	4.64	4.68	4.79	4.62	4.77	4.69	5.22	6.03	7.40	8.97 [k]	10.83 [l]
Italy	...	4.19	5.11	5.12	...	6.16 [m]	6.50 [m]	6.75	...	7.43	...
Netherlands	4.75	4.89	5.52	5.45	6.01	6.01	6.12	5.88	6.21	7.01	7.73
Norway	...	5.75 [n]	6.23 [o]	6.10 [p]	7.63	7.91	7.79	7.70	8.29	...	9.62
Portugal	...	4.67	...	4.73	6.00	5.72	5.90	5.92	6.19	6.46	6.97
Spain	...	...	...	4.18	...	...	...	...	...	6.53	7.23
Sweden	4.78	5.22	5.43	5.90	7.68	8.37	8.44	8.40	9.20	9.41	10.31
Switzerland	...	5.11	5.54	5.53	5.81	5.84	5.80	5.83	6.87	8.56	9.62
OCEANIA											
Australia	...	...	...	...	...	...	4.29	4.42	6.49	...	8.04
New Zealand	...	...	...	...	2.29	4.06	4.73	4.89	6.56 [q]	9.02 [f]	9.57

[a] 1895.

[b] Excluding Federal District and the Indian population.

[c] Smoothed age distribution based on a 10 per cent sample of census returns.

[d] 1905.

[e] 1935.

[f] 1945.

[g] Excluding non-declared and those aged 95.

[h] Estimated mean population.

[i] 1925. Excluding Saar.

[j] The data relate to the Federal Republic, excluding West Berlin. In the Peoples' Republic the percentage was 9.98 in 1946.

[k] National Registration.

[l] Based on a 1 per cent sample of census returns.

[m] 1901 and 1911 data are not strictly comparable with the following years on account of territorial changes.

[n] 1855.

[o] 1865.

[p] 1875.

[q] 1936.

was not reached by the population of the United States until 1940. At the beginning of the present century some populations were already considerably aged; that was particularly so in the case of Sweden, France and Norway, where the percentage of old people stood at 8.47, 8.2 and 7.9 respectively. On the other hand the populations of Great Britain and of Germany, which today belong to the category of the most aged populations, had less than 5 per cent of old people round about 1900.

Table 3 helps to analyse the aging trends by providing the index numbers of the percentages shown in the preceding table with "about 1900" as the base. The following conclusions emerge: firstly, aging seems to have been a continuous process; only in a few cases has the proportion of the old declined from one decade to another. Secondly, with the notable exception of Sweden, very little aging at the apex of the age pyramid took place in the second half of the nineteenth century. In most countries aging is a relatively recent phenomenon. Thus among the countries included, the proportion of the old increased at least twofold in the period 1900 to 1950 in the United States, Argentina, Austria, Great Britain and New Zealand.

It is of interest to study the rate at which each of the populations under review has been aging at the apex from one decade to another. These rates are shown in table 4, which gives chain indices of the proportion of the old. Generally speaking the rate is far from systematic.[5] It appears that the period of most rapid aging at the apex, especially for most of the European populations, was between 1910 and 1940. Unfortunately owing to the war there are no data for the year 1940 for a number of European countries but those which do exist indicate that between 1940 and 1950 the rate of aging slowed down somewhat compared with the preceding decades.

It has already been pointed out that increases in the proportion of the old have usually been preceded, and at a later stage accompanied, by an increase in the proportion of adults.[6] In this context the term "adults" is generally used to denote persons in the age-group 15 to 64, who comprise what may be called the potential labour force.

Column 2 of table 1 reveals that at present the aged populations contain on the whole a considerably larger

[5] It must be remembered, however, that the periods covered are not always ten-year periods. See footnotes to table 2.

[6] Another way of putting it is that the increase in the proportion of the old has been slower than the decrease in the proportion of the young. That is why the overall dependency burden (of the old and the young) has actually been decreasing in many countries.

TABLE 3. — PERCENTAGE OF PERSONS AGED 65 AND OVER OF TOTAL POPULATION IN SELECTED COUNTRIES, 1850-1950 (1900 = 100)

Country	In or about										
	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
NORTH AMERICA											
Canada	...	...	...	...	...	100	92	94	110	132	153
USA	...	...	...	...	...	100	106	115	133	168	200
SOUTH AMERICA											
Argentina	...	...	...	...	...	100	118	...	...	...	202
Brazil	...	...	...	...	...	100	...	...	...	114	117
EUROPE											
Austria	...	...	79	88	98	100	106	125	136	177	212
Belgium	95	91	102	104	104	100	103	105	123	...	173
Bulgaria	...	...	...	...	110	100	104	110	102	...	...
Denmark	82	78	87	91	105	100	99	103	...	113	126
France	79	84	90	99	101	100	102	110	114	...	144
Germany	...	...	...	97	105	100	103	118	151	182	190
Great Britain	99	100	102	99	102	100	111	129	158	191	231
Italy	...	68	83	83	...	100	106	110	...	121	...
Netherlands	79	81	92	91	100	100	102	98	103	117	129
Norway	...	73	79	77	96	100	98	97	105	...	122
Portugal	...	82	...	83	105	100	103	103	108	113	122
Sweden	57	62	65	70	92	100	101	100	110	112	123
Switzerland	...	88	95	95	99	100	99	100	118	147	165
OCEANIA											
New Zealand	...	...	...	...	56	100	116	120	162	222	236

TABLE 4. — CHAIN INDICES OF PERCENTAGE OF PERSONS AGED 65 AND OVER OF TOTAL POPULATION IN SELECTED COUNTRIES, 1850-1950

(Percentage for preceding date = 100)

Country	In or about										
	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
AFRICA											
Egypt	...	...	...	...	...	...	...	...	100	126	85
NORTH AMERICA											
Canada	...	...	...	...	...	100	92	103	116	120	116
USA	...	...	...	...	...	100	106	109	116	127	119
SOUTH AMERICA											
Argentina	...	...	...	...	...	100	118	...	...	...	...
Brazil	...	...	...	...	...	...	...	...	...	...	...
Chile	...	...	...	...	...	...	...	100	103	103	...
ASIA											
Ceylon	...	...	...	...	...	...	...	104	...	...	..
India	...	...	...	...	...	...	100	104	87	...	...
Japan	...	...	...	...	...	...	...	100	90	99	105
EUROPE											
Austria	...	...	100	112	111	102	106	118	109	130	120
Belgium	100	96	112	102	100	96	103	102	117	...	...
Bulgaria	...	...	...	...	100	91	104	106	92	...	...
Denmark	100	95	112	105	115	96	99	103	...	...	111
France	100	106	108	109	102	99	102	108	103	...	...
Germany	...	...	...	100	108	96	103	114	128	120	105
Greece	...	...	100	97	99	...	...	137	104	108	...
Great Britain	100	101	102	96	103	98	111	116	123	121	121
Italy	...	100	122	100	...	...	106	104	...	...	...
Netherlands	100	103	113	99	110	100	102	96	106	113	110
Norway	...	100	108	98	125	104	98	99	108	...	...
Portugal	...	...	...	100	127	95	103	100	105	104	108
Spain	...	...	...	...	...	...	...	...	...	100	111
Sweden	100	109	104	109	130	109	101	100	110	102	110
Switzerland	...	100	108	100	105	101	99	101	118	125	112
OCEANIA											
Australia	...	...	...	...	...	...	100	103	147	...	...
New Zealand	...	...	...	...	100	177	117	103	134	138	106

proportion of persons aged 15 to 64 than do the relatively younger populations. In the former this percentage varies between 65 and 70, whereas in the latter it rarely exceeds 55. Past variations in this proportion, as shown in table 5, indicate little change in the second half of the last century, i. e., in the period during which the proportion of the old, too, changed very little. A considerable rise in the proportion of adults took place in the 1900 to 1940 period, when it increased for instance from about 63 to 70 per cent in Great Britain, from 59 to 70 per cent in Sweden and from 61 to 68 per cent in the United States. Some countries provide an exception to this rule, notably France, but that is probably attributable to their war casualties, which affect the adult age-group more than any other.[7] The effects of the last war, in conjunction with the sharp rise in birth-rate at the end of the war, are also responsible for a slight decline in the proportion of adults in the 1940 to 1950 decade, which can be seen in most of the populations under review.

Another demographic phenomenon which is associated with aging at the apex of the pyramid and has important economic consequences is the aging of the labour force (or, to be exact, of the *potential* labour force): i. e., the

[7] The same applies to the effect of migration. The decline in the proportion of adults in Sweden from about 62 per cent in 1850 to 59 per cent in 1900 was no doubt due to the large volume of emigration from Sweden during this period.

TABLE 5. — PERCENTAGE OF PERSONS AGED 15-64 OF TOTAL POPULATION IN SELECTED COUNTRIES, 1850-1950

Country	In or about										
	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
AFRICA											
Egypt	...	...	...	...	...	...	...	...	58.41	57.17	58.81
NORTH AMERICA											
Canada	...	...	...	...	...	60.38	62.27	60.78	62.81	65.53	61.90
USA	...	...	...	...	...	61.46	63.57	63.49	65.20	68.11	64.99
SOUTH AMERICA											
Argentina	...	...	...	...	...	57.70 [a]	59.26	...	...	...	65.21
Brazil	...	...	...	...	...	52.86 [b]	...	...	...	55.06	55.69
Chile	...	...	...	...	...	...	...	57.67	58.69	59.25	...
ASIA											
Ceylon	...	...	...	...	54.49	...	56.81	58.24	...	...	59.32
India	...	...	...	...	...	...	59.16	58.46	57.81	...	58.96 [c]
Japan	...	...	...	...	...	...	...	58.27	58.69	59.24	59.63
EUROPE											
Austria	...	...	62.24	61.61	60.98	60.62	59.89	68.39	70.59	70.05	66.53
Belgium	61.80	64.05	61.99	60.05	60.80	62.09	63.07	68.49	69.44	...	68.73
Bulgaria	...	...	...	...	52.66	54.67	55.28 [d]	58.09	59.26	...	...
Denmark	61.46	61.08	60.78	60.11	58.22	59.41	59.73	61.96	...	67.06 [e]	66.97 [f]
France	66.23	66.20	65.54	65.18	65.46	65.68 [g]	65.88	68.22	67.72	...	66.53 [h]
Germany	...	...	...	59.83	59.76	60.33	60.92	68.20 [i]	69.11	66.46 [j]	67.13 [j]
Greece	...	...	58.23	57.23	57.22	...	57.58	60.08	61.97	60.70	...
Great Britain	59.88	59.63	59.03	58.91	60.09	62.76	63.94	66.03	68.43	69.64 [k]	66.67 [l]
Italy	...	61.65	62.43	62.68	...	59.72 [m]	59.55 [m]	62.06	...	61.94	...
Netherlands	61.86	62.63	61.08	59.44	58.78	...	...	61.51	63.17	65.14	62.99
Norway	...	...	57.71 [n]	59.50 [o]	56.52 [p]	56.54	56.85	60.21	63.21	...	65.98
Portugal	...	61.42	...	61.49	60.82	60.49	59.69	61.31	61.83	61.47	63.55
Spain	...	...	...	63.43	...	...	...	...	...	63.53	66.54
Sweden	62.36	61.27	60.51	61.52	59.00	59.19	59.84	62.31	65.95	70.19	66.28
Switzerland	...	65.34	62.98	62.56	62.10	63.18	62.96	66.22	68.55	69.32	66.84
OCEANIA											
Australia	...	...	...	...	...	...	63.95	63.76	66.03	...	66.74
New Zealand	...	...	...	...	57.67	62.54	63.95	63.71	67.92 [q]	65.21 [f]	62.05

[a] to [q] See footnotes to table 2.

increase in the number of older adults relative to that of younger adults. One way of showing this tendency is to compute the ratio of persons aged 45 to 64 to those aged 15 to 64. This has been done in the case of the twenty-six selected countries (table 6). It will be seen that among the populations characterized by a relatively young structure, such as those of Argentina, Brazil and Chile, the older adults constitute about 20 per cent of all those aged 15 to 64 but that the percentage is higher in some of the "aged" populations, such as Austria or France, where it amounts to nearly 40 per cent. It will be noticed, too, that this aging of the labour force has on the whole followed the trends in the proportion of the old, and in particular that the most rapid increase in this index has taken place during the last forty years or so.

B. DIFFERENTIAL AGING

So far we have discussed the present pattern and past trends in aging of entire populations contained within the boundaries of a State or a country. It has, however, been assumed that the age structure of each section of a given population is the same as that of the whole population; that is an obvious simplification. Since the age composition depends, as we shall see in the following chapter, on past trends in three main components of population growth—namely, fertility, mortality and migration—and since these trends are not uniform among the various sections of the population of a given country, it is natural to conclude that age composition and the incidence of aging vary, too, from one group to another.

TABLE 6. — PERCENTAGE OF PERSONS AGED 45 TO 64 OF ALL PERSONS AGED 15 TO 64 IN SELECTED COUNTRIES, 1850-1950

Country	In or about										
	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
AFRICA											
Egypt	...	...	...	...	...	...	...	...	22.4	22.4	23.4
NORTH AMERICA											
Canada	...	...	...	...	...	23.2	22.6	24.7	26.6	28.4	28.7
USA	...	...	...	...	...	22.3	23.0	25.4	26.8	29.1	31.3
SOUTH AMERICA											
Argentina	...	...	...	...	...	18.1 [a]	18.0	...	...	...	24.8
Brazil	...	...	...	...	...	17.7 [b]	...	...	...	18.6	19.3
Chile	...	...	...	...	...	...	...	20.1	20.5	21.6	...
ASIA											
Ceylon	...	...	...	...	18.4	...	19.1	19.3	...	...	20.5
India	...	...	...	...	...	...	21.1	21.6	19.8	...	22.0 [c]
Japan	...	...	...	...	...	...	...	25.7	25.9	25.1	25.1
EUROPE											
Austria	...	...	26.7	26.9	27.0	26.5	26.9	28.5	29.7	32.8	38.9
Belgium	26.9	28.3	28.6	28.3	27.5	25.9	26.2	28.7	31.1	...	35.6
Bulgaria	...	...	...	...	27.6	26.1	25.7 [d]	23.5	25.0	...	...
Denmark	26.1	26.2	28.3	28.6	27.9	27.1	27.2	26.8	...	28.7 [e]	31.1 [i]
France	29.8	30.6	31.6	31.4	31.1	31.1 [g]	31.4	33.5	33.1	...	36.2 [h]
Germany	...	...	...	26.5	26.2	25.4	25.1	28.1 [i]	30.4	34.8 [j]	35.9 [j]
Greece	...	...	21.4	20.8	20.8	...	23.3	26.8	25.8	25.8	...
Great Britain	23.4	24.3	24.9	24.2	23.9	23.7	25.2	29.1	31.4	32.3 [k]	36.0 [l]
Italy	...	25.7	27.6	28.0	...	29.4 [m]	29.4 [m]	28.0	...	28.3	...
Netherlands	26.4	25.8	27.4	28.2	28.1	...	...	26.2	27.1	28.1	30.5
Norway	...	...	25.2 [n]	28.1 [o]	28.2 [p]	27.2	28.5	26.3	26.6	...	33.3
Portugal	...	26.9	...	29.0	29.0	28.4	27.5	27.2	27.0	26.8	27.5
Spain	...	...	...	29.2	...	...	...	...	...	27.1	28.1
Sweden	26.0	25.1	28.4	29.6	30.0	28.7	29.2	28.1	28.6	30.7	34.7
Switzerland	...	27.5	28.6	28.8	29.5	26.6	26.1	28.3	29.8	31.6	34.7
OCEANIA											
Australia	...	...	...	...	...	...	23.2	26.6	28.2	...	31.8
New Zealand	...	...	...	...	23.5	21.7	20.8	25.4	31.5 [q]	32.7 [f]	31.7

[a] to [q] See footnotes to table 2.

In this chapter we shall consider such differentials as sex, ethnical characteristics and community type (rural or urban). Such analysis is of interest, not only because it demonstrates the lack of homogeneity with regard to the age composition of an entire population, but also because it is helpful in ascertaining the causes of aging and in appraising future trends with more accuracy.

1. *Sex differential*

The age composition of the male population is usually different from that of the female population, on account of two factors. Firstly, in most populations the mortality rate among men has for a considerable period of time been greater than among women. [8] The second factor, namely the preponderance of men over women among migrants, plays perhaps a less important role and its effect is limited to countries where there is a heavy volume of migration in relation to the total population.

[8] According to the available data the expectation of life at birth of men is slightly higher than that of women in some under-developed countries, particularly in Asia. The difference is, however, very slight and may be attributable to inaccurate mortality statistics.

TABLE 7. — PERCENTAGE OF PERSONS AGED 65 AND OVER OF ALL PERSONS OF THE SAME SEX IN SELECTED COUNTRIES, 1850-1950

Country	Sex	In or around										
		1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
AFRICA												
Egypt	M	...	...	...	...	...	...	...	...	2.63	3.32	2.84
	F	...	...	...	...	...	...	...	...	3.16	4.00	3.34
NORTH AMERICA												
Canada	M	...	...	...	...	...	5.06	4.47	4.75	5.48	6.62	7.78
	F	...	...	...	...	...	5.05	4.87	4.83	5.63	6.72	7.74
USA	M	...	...	...	...	...	4.03	4.21	4.62	5.35	6.67	7.75
	F	...	...	...	...	...	4.11	4.41	4.73	5.46	7.03	8.53
SOUTH AMERICA												
Argentina	M	...	...	...	...	...	1.81 [a]	2.16	...	...	...	3.71
	F	...	...	...	...	...	2.15 [a]	2.49	...	...	...	4.11
Brazil	M	...	...	...	...	...	2.08 [b]	...	...	...	2.19	2.27
	F	...	...	...	...	...	2.14 [b]	...	...	...	2.59	2.66
Chile	M	...	...	...	...	...	...	...	3.11	3.15	3.18	...
	F	...	...	...	...	...	...	...	3.49	3.66	3.81	...
ASIA												
Ceylon	M	...	...	...	...	2.25	...	2.51	2.61	...	...	3.53
	F	...	...	...	...	1.78	...	2.05	2.16	...	...	3.35
India	M	...	...	...	...	...	...	2.29	2.40	2.11	...	3.43 [c]
	F	...	...	...	...	...	...	2.50	2.59	2.24	...	3.75 [c]
Japan	M	...	...	...	...	...	...	...	4.66	4.08	3.99	4.26
	F	...	...	...	...	...	...	...	5.87	5.44	5.42	5.60
EUROPE												
Austria	M	...	...	4.00	4.36	4.72	4.68	4.94	5.72	6.38	8.09	9.52
	F	...	...	3.85	4.40	5.00	5.27	5.57	6.71	7.14	9.49	11.50
Belgium	M	5.49	4.96	5.88	6.10	5.98	5.74	5.84	5.83	6.91	...	9.76
	F	6.26	6.33	6.79	6.79	6.85	6.62	6.92	7.11	8.25	...	11.61
Bulgaria	M	...	...	...	...	5.75	5.36	5.61 [d]	5.90	5.27	...	...
	F	...	...	...	...	5.45	4.88	5.05 [d]	5.41	5.15	...	...
Denmark	M	4.90	4.63	5.27	5.51	6.44	6.14	6.13	6.41	...	7.02 [e]	7.99 [f]
	F	5.95	5.80	6.33	6.63	7.48	7.14	7.11	7.27	...	7.98 [e]	8.75 [f]
France	M	6.06	6.15	7.06	7.80	7.92	7.63 [g]	7.61	8.23	8.30	...	9.68 [h]
	F	6.89	7.23	7.75	8.38	8.65	8.74 [g]	9.09	9.78	10.33	...	13.77 [h]
Germany	M	...	...	...	4.46	4.71	4.42	4.47	5.27 [i]	6.89	9.01 [j]	8.91 [j]
	F	...	...	...	4.96	5.48	5.33	5.58	6.23 [i]	7.82	8.71 [j]	9.58 [j]
Greece	M	...	...	3.70	3.49	3.48	...	4.17	5.54	5.73	5.89	...
	F	...	...	3.57	3.57	3.55	...	4.08	5.77	6.00	6.72	...
Great Britain	M	4.28	4.31	4.44	4.24	4.31	4.18	4.63	5.40	6.65	8.03 [k]	9.26 [l]
	F	5.02	5.02	5.11	4.99	5.20	5.16	5.80	6.62	8.10	9.85 [k]	12.27 [l]
Italy	M	...	4.21	5.20	5.22	...	6.16 [m]	6.54 [m]	6.72	...	7.15	...
	F	...	4.14	5.00	5.03	...	6.20 [m]	6.45 [m]	6.78	...	7.71	...
Netherlands	M	4.26	4.33	5.01	4.99	5.55	5.59	5.76	5.55	5.95	6.71	7.42
	F	5.21	5.42	6.00	5.91	6.44	6.42	6.48	6.21	6.46	7.29	8.04
Norway	M	...	5.11 [n]	5.60 [o]	5.55 [p]	7.30	7.56	7.35	6.99	7.46	...	8.66
	F	...	6.37 [n]	6.84 [o]	6.63 [p]	7.92	8.27	8.20	8.37	9.11	...	10.60
Portugal	M	...	4.40	...	4.39	5.69	5.21	5.37	5.27	5.38	5.39	5.71
	F	...	4.90	...	5.06	6.29	6.21	6.39	6.50	6.96	7.47	8.14
Spain	M	...	...	...	4.16	...	...	...	...	...	5.80	6.15
	F	...	...	...	4.21	...	...	...	...	...	7.21	8.24
Sweden	M	3.94	4.39	4.56	5.15	6.98	7.60	7.62	7.58	8.38	8.68	9.70
	F	5.60	5.99	6.16	6.59	8.35	9.08	9.22	9.19	10.01	10.11	10.94
Switzerland	M	...	5.13	5.60	5.40	5.57	5.43	5.21	5.19	6.10	7.61	8.54
	F	...	5.07	5.47	5.65	6.03	6.20	6.36	6.45	7.60	9.43	10.60
OCEANIA												
Australia	M	...	...	...	...	...	...	4.35	4.45	6.38	...	7.42
	F	...	...	...	...	...	...	4.22	4.37	6.58	...	8.65
New Zealand	M	...	...	...	...	2.53	4.73	5.18	5.18	6.48 [q]	9.01 [f]	9.09
	F	...	...	...	...	2.05	3.33	4.22	4.57	6.62 [q]	9.01 [f]	10.07

[a] to [q] See footnotes to table 2.

The net effect of these differentiating factors may be studied from the series of data presented in the appendix. Table 7 shows changes in the percentage of old men and women in the twenty-six selected populations. It appears that on the whole female populations were relatively more aged than male populations during the whole period under review. The few exceptions apply mainly to the populations of countries which experienced a considerable influx of migrants, especially at the turn of the century, such as New Zealand, Australia and Ceylon. For the same reason the differential is insignificant in Canada where immigration doubtless offset the difference in the mortality rates of the two sexes. The effects of wars have also introduced some irregularities; for instance, in the Federal Republic of Germany in 1946 the proportion of old men was higher than that of old women, the war having had more effect upon the male adult population than upon the female adult population. [9]

Round about 1950 the strongest sex differential among those of 65 years and over is observed in France and Great Britain. In the former the percentage of old men in relation to all males was about 9.7 as against about 13.8 of old women in relation to all females; in Great Britain the corresponding figures were 9.3 per cent and 12.2 per cent. Since the number of women has always exceeded that of men in any of the twenty-six populations, the differential is even more spectacular when the sex composition of all persons above the age of sixty-four is considered rather than the percentages within each sex. In the United States, for example, in 1950 there were 112 women aged sixty-five or over for every 100 men of the same age. In Great Britain this ratio was 143 in 1951 and in France it was as high as 153.

2. *Ethnic differential*

The population contained within the boundaries of a State is often heterogeneous. When the ethnic groups composing the population differ with respect to family-building habits or mortality rates, they have also a different age composition. This is most likely to happen when the different ethnic groups have achieved different degrees of economic and social development; religious and cultural differences may also play some part, especially through their influence on the attitude towards family planning. Owing to limitations of space only a few examples of ethnic differences with regard to aging can be given in this study.

Table 8 shows trends in the percentage of persons aged sixty-five or over among the white and non-white population of the United States during the period 1900 to 1950. The white population appears to be relatively more aged at each date. The difference in the degree of aging increased from about 1 per cent in 1900 to nearly 3 per cent 1950. Both groups have aged considerably during the period.

Canada offers a good example of an ethnically heterogeneous population. The following data summarize the

TABLE 8. — PERCENTAGE OF PERSONS AGED SIXTY-FIVE AND OVER AMONG THE WHITE AND NON-WHITE POPULATION OF THE UNITED STATES, 1900-1950

	1900	*1910*	*1920*	*1930*	*1940*	*1950*
Whites	4.2	4.5	4.8	5.7	7.1	8.5
Non-whites	3.0	3.0	3.2	3.2	4.7	5.7

incidence of aging among various segments of the Canadian population in 1951, distinguished by religion, origin and mother tongue :

	Sixty-five and over (percentage)
Religious denomination	
Church of England	10.2
United Church of Canada	8.8
Roman Catholic	5.5
Jewish	6.7
Origin	
English Canadians	10.1
French Canadians	5.3
Mother tongue	
English	8.9
French	5.4
German	8.9
Ukrainian	5.8

Among the largest religious groups the proportion of the aged is almost twice as high among Protestants as among Catholics. The same tendency, doubtless attributable to the higher fertility level among the Catholics (most of whom are of French origin), can be observed in the two other subdivisions. Some of the differences are to be explained by a difference of environment (rural or urban). For instance, the overwhelming majority of the Ukrainians live in the country, where birth rates are high; hence their age composition is relatively young.

There are innumerable examples of ethnic differential in aging. A frequent example is that of non-European countries in which the relatively recent European settlers are compared with the native population. Owing to their lower fertility and mortality rates the Europeans invariably show a higher incidence of aging. For instance, according to the 1946 census, the Europeans in the Union of South Africa had about 6.2 per cent of persons aged sixty-five or over, whereas the non-Europeans had only about 3,6 per cent. In New Zealand in 1951 this percentage was 9.6 among the persons of European origin but only about 2.5 among the native Maoris.

The influence of the ethnic differential on the proportion of persons of sixty-five years and over of the whole population of a country depends not only on the magnitude of the difference but also on the relative size of the various ethnic groups in relation to the total population. For instance, in the above examples the Maoris constitute only about 6 per cent of New Zealand's population, and the non-whites about 10 per cent of the population of the United States; on the other hand, persons of French origin comprise more than 30 per cent, and Catholics about 43 per cent of the Canadian population.

[9] It is also possible that differential migrations may have contributed to this phenomenon.

3. *Urban/rural differential*

Comparisons of age composition of rural and urban communities encounter a number of difficulties. The data available are scanty and when they cover a fairly long period they are rarely comparable, on account of changes in definition. Similarly, the classifications and definitions vary from one country to another, thus vitiating international comparisons.

The existence of an urban/rural aging differential is normally due to the fact that fertility and mortality trends differ in urban and rural communities, as has been observed in many populations. To this extent its causes are similar to those which tend to make the population of one country more aged than that of another. The analogy ends here, however, for there is another important factor, that of internal migration. Migratory movements from the country to the town—which are the corollary of the process of urbanization—involve mainly young adults and consequently have the immediate effect of increasing the proportion of the old in rural areas. Furthermore, retired city-dwellers tend more and more to move to the country. [10] These aging effects of migratory movements are, however, partly offset by the higher fertility level in the country. The situation is more complicated with regard to the urban/rural mortality differential. Large cities and industrial towns used to be looked upon as graveyards of the population. The gap seems to have narrowed recently but on the whole the expectation of life is still higher in the rural than in the urban areas, as least in the Western countries. There are, however, exceptions to this rule.

The examples chosen to illustrate the differential are those of Sweden in the period 1900 to 1945, France in 1946 and Great Britain in 1951. The relevant data are shown in tables 9, 10 and 11 respectively.

TABLE 9. — PERCENTAGE OF PERSONS AGED SIXTY-FIVE AND OVER BY SEX AND URBAN AND RURAL RESIDENCE. SWEDEN, 1900, 1930 AND 1945. [a]

Year	Both sexes		Males		Females	
	Country	Town	Country	Town	Country	Town
1900 . .	9.0	6.0	8.4	4.5	9.6	7.3
1930 . .	9.9	7.7	9.3	6.4	10.6	8.8
1945 . .	11.0	8.4	10.5	7.4	11.6	9.3

[a] *Source :* Statistical Yearbook of Sweden, 1951.

It will be seen that both in Sweden and in France the differential is very marked, in that the rural populations are considerably more aged than the town populations. The example of Sweden shows that the differential was already marked at the beginning of the present century, at least with regard to this country, and that the pattern has scarcely changed during the last fifty years. It is interesting to note—and this holds good for both countries—that the differences are greater among males than among females.

[10] External migration may also have a differentiating effect in so far as it affects rural areas more than the urban centres.

TABLE 10. — PERCENTAGE OF PERSONS AGED SIXTY-FIVE AND OVER BY SEX AND TYPE OF COMMUNITY. FRANCE, 1946. [a]

Type of community	Both sexes	Males	Females
Rural.	12.8	11.5	14.1
Urban	9.3	7.4	10.9
Below 5 000 inhabitants. .	10.7	9.1	12.2
5 000-10 000 inhabitants. .	9.8	8.1	11.2
10 000-50 000 inhabitants .	9.4	7.5	11.1
50 000 and more inhabitants	8.6	6.6	10.4

[a] *Source :* 1946 census, vol. II.

TABLE 11. — PERCENTAGE OF PERSONS AGED SIXTY-FIVE AND OVER BY SEX AND DENSITY AGGREGATES. GREAT BRITAIN, 1951. [a]

Density aggregates	Both sexes	Males	Females
Conurbations [b].	10.2	8.6	11.6
Urban areas :			
100 000 inhabitants or more	10.8	9.2	12.2
50 000-100 000 inhabitants	11.6	9.5	13.4
Below 50 000 inhabitants .	11.4	9.7	13.0
Rural areas	11.3	10.1	12.5

[a] *Source :* Census of Great Britain, 1951. One per cent sample tables.

[b] The term "conurbation" is used to denote a collection of built-up areas, each retaining its own individuality and each forming a balanced urban unit.

The French data introduce a more detailed classification of community types, distinguishing between towns of varying sizes. The pattern of differential aging is very systematic, the percentage of the old showing a decline from 12.8 per cent in the rural areas to 8.6 per cent in the towns with more than 50,000 inhabitants. The range is considerably wider for the male population, the corresponding figures being 11.5 per cent and 6.6 per cent.

The 1951 Census of Great Britain distinguishes between "density aggregates". Rural areas show slightly higher incidence of aging than the conurbations, [11] but on the whole the same does not apply to the urban areas classified according to the size of town. Among the males the percentage of the old varies systematically from 8.6 per cent in the conurbations to 10.1 per cent in the rural areas, but no clear variation is to be observed among the females.

C. SUMMARY OF CONCLUSIONS

1. Incidence of aging is at present very uneven among the various populations of the world. The data for 1950 show that in France there was one person in eight, in Sweden one in ten and in the United States one in twelve over the age of sixty-four, whereas in Japan the ratio

[11] See footnote [b] to table 11.

was one in twenty, in Colombia one in thirty-four and in the Gold Coast one in sixty-six.

2. Only a few populations in Western, Central and Northern Europe, North America and Oceania can be described as relatively "aged".

3. The populations of Sweden and France were already comparatively aged at the turn of the century, but in most countries aging is a relatively recent phenomenon. There has been a very large increase in the proportion of the old during the last few decades.

4. The increase in the proportion of the old was preceded, and later accompanied, by an increase in the proportion of persons of working age. At the same time the ratio of older adults to younger adults has also been increasing. The latter phenomenon is usually referred to as aging of the potential labour force.

5. Various groups within the population of a given country may differ with regard to their age structure and the incidence of aging. Aging differentials exist whenever such groups are distinguished by differing fertility and mortality levels. Both external and internal migration may also constitute a differentiating factor. The subject does not lend itself to easy generalization, except, perhaps, with regard to the sex differential. In advanced countries the proportion of old women is usually higher than that of old men.

Chapter II

CAUSES OF THE AGING OF POPULATIONS

A. INTRODUCTION

Having stated the facts, we must examine the causes. The question that must be answered is why the age composition of the population of certain countries has changed in the course of time whereas in others it has remained virtually unchanged.

The age structure of a population changes in accordance with movements in births, movements in deaths and migratory movements. In any given country these three movements are determined by three fundamental factors:

(*a*) The reproductive behaviour of couples;

(*b*) Health conditions;

(c) The tendency of the country concerned to attract immigrants or encourage emigration.

1. *What can be learned from the facts*

Observation of the facts gives some indication of the part these three factors have played in the past in the modification of the age structure of populations. Two conclusions can be drawn from the tables in the preceding chapter:

(1) The modification of the age structure of populations is a relatively recent phenomenon and has not yet affected many countries. All the under-developed countries, for instance, have very similar age compositions and where figures are available they show that the age composition has hitherto varied very little. The aging of populations at the apex of the pyramid is therefore a characteristic of the developed countries.

TABLE 12. — CHANGES IN COMPOSITION BY BROAD AGE GROUPS OF THE POPULATION, IN MORTALITY AND IN FERTILITY ON THE ISLAND OF TAIWAN (FORMOSA)[a]

Age groups (in years)	*Census years*						
	1905	*1915*	*1920*	*1925*	*1930*	*1935*	*1940*
All age groups combined . .	1 000	1 000	1 000	1 000	1 000	1 000	1 000
0-14.	366	394	399	395	405	422	441
15-59	589	560	556	561	553	533	511
60 years and over.	45	46	45	44	42	45	48
Gross reproduction rate. . .	2.93	3.07	3.00	[b]	3.39	3.31	3.26
Expectation of life at birth (in years)	28.5	[b]	36.5	40.0	41.5	42.7	44.0

[a] The figures in the table are taken from G. W. Barclay, *Colonial Development and population in Taiwan* and from the *Statistical Abstract of Taiwan*, 1895-1946. For 1905, 1915, 1920 and 1925 a slight correction has been made in the census figures for children under five years of age, to allow for under-enumeration. Mortality tables exist for 1905, 1920 and 1936-1940. These tables have been used to interpolate the figure for expectation of life in 1930 and to extrapolate the figure for expectation of life in 1940. As there is little change in the age composition, the crude birth and death rates provide a good index of variations in health conditions and the reproductive behaviour of couples. Variations in these rates were as follows and they confirm the indications given in the table:

Period	*Crude death rate per 1 000*	*Crude birth rate per 1 000*
1920-1924	25.3	40.9
1925-1929	22.4	42.7
1930-1934	20.3	44.7
1935-1939	19.8	44.0
1940-1950	about 10	about 45

[b] No data available.

(2) Where age composition has been modified in the past, the change has approximately coincided with a decline in fertility. It might even be said that the reduction of mortality, when not accompanied by a decline in fertility, has left age structure almost unchanged.

It would appear that we can, provisionally at least, adopt the following conclusions : *movements in fertility have in the past had much more effect on the age structure of populations than movements in mortality and migratory movements; in particular, the effect of the reduction of mortality does not seem to have been important.*

The tables in chapter I offer many examples in support of these statements. However, far more conclusive examples can be found. The following table (Table 12) regarding the island of Taiwan (Formosa) is particularly revealing in this respect.

The situation in the Republic of Costa Rica is, as Table 13 shows, similar in all respects to that in Taiwan. As in the case of Taiwan, a considerable decline in mortality occurs in association with constant fertility and age structure.

TABLE 13. — COMPOSITION BY BROAD AGE GROUPS OF THE POPULATION OF COSTA RICA, IN 1927 AND 1950, AND CRUDE BIRTH AND DEATH RATES AT ABOUT THE SAME TIMES

Age groups (In years)	*1927*	*1950*
All ages groups combined	100.0	100.0
0-14	41.3	42.9
15-59	54.5	52.2
60 years and over.	4.2	4.9
Crude birth rate (per 1 000) . . .	46.2 [a]	45.8 [b]
Crude death rate (per 1 000). . .	23.2 [a]	12.3 [b]

[a] Average for 1925-1929.

[b] Average for 1949-1951.

It is, however, difficult to draw general conclusions from a consideration of actual populations, particularly from special cases such as the two examined above. In practice the three factors mentioned earlier (fertility, mortality and migrations) vary simultaneously and cases in which only one of them vary are unusual. In Taiwan, for instance, although fertility can be assumed to have remained practically constant from 1905 to the present time, this is not true of migratory movements. The same is probably the case in Costa Rica. Examination of the facts can therefore permit us only to make assumptions which we must try to confirm by means of methods whereby the effects of each of the three factors considered can be isolated.

2. *The special role of migrations*

Of the three factors considered, migratory movements are in a special position, for several reasons.

While variations in health conditions and the reproductive behaviour of couples encounter physiological or socio-economic obstacles beyond the control of the individual, there is nothing, *a priori*, to prevent any migratory movement from taking place. [1] Consequently, age structure may be modified in any way by migratory movements. It is always possible to determine what migratory movement will produce a given change and the movement will not encounter insurmountable obstacles. It is therefore difficult to reach any general conclusions.

It should, however, be observed that actual migratory movements fall into certain general categories and the diversity of possible movements is not, therefore, so great as might be expected. Nevertheless, although these categories can be described in broad outline the statistical data are usually insufficient to determine their exact magnitude and it is therefore necessary to consider the effects of migrations on age structure on the basis of arbitrary assumptions. Results of the following kind are then obtained: if such and such a population is augmented every year by the absorption of 100,000 immigrants, with such and such an age and sex distribution, the age structure of the population will change in such and such a manner. This is clearly a highly artificial result.

Moreover, although many movements are similar in kind and can be placed in the same category, they nevertheless vary greatly in intensity. Yet the effect of these movements on age structure depends, perhaps, rather more on their intensity than on their nature. It is this variation in intensity which has at times led to a failure to appreciate the effects of migratory movements on age structure. It is true that at the present time there are no large-scale international migrations and their effects on age structure may for the most part be ignored, save for certain exceptional cases. This is not, however, true of internal migrations. Some of the differences observed between the age structures of urban and rural populations are undoubtedly due to migratory movements between these two populations. But there again, the statistical data obtainable are usually inadequate to permit of a proper study.

One conclusion is suggested by these facts. The demographer does not possess the tools necessary to study migratory movements and their demographic effects as they should be studied. Investigations are being made in many places but a proper solution has yet to be found. For all these reasons the question of the effects of migratory movements will, for the time being, be left to one side and the effects of the other two factors will be studied. The subject of migrations will be considered at the end of the chapter and some of the partial results obtained will be indicated.

[1] This does not mean that there are no obstacles to the occurrence of migratory movements, but the obstacles do not involve the whole socio-economic apparatus as is the case with variations in fertility and mortality. In other words, abrupt changes are rare in the case of movements in fertility and mortality but more or less the rule in the matter of migratory movements.

B. Techniques of analysis

1. *Choice of indices*

(a) *Health conditions*

Health conditions and the reproductive behaviour of couples, which have hitherto been discussed in general terms, must now be translated into indices. The health conditions of a population obviously can not be measured by a single index. In a given population they are determined by the proportion of sick persons, the nature and length of their illnesses, the proportion of illnesses that end in death, etc. However, the health conditions of a population affect age structure directly only through the number of deaths. [2] We can therefore confine our attention to this aspect. More precisely, the various age specific death rates corresponding to a given set of health conditions are the magnitudes through which these conditions have an effect on the age structures of populations.

As in the case of migrations, one would be tempted *a priori* to assume that age specific death rates could vary in all possible ways and one might imagine all kinds of differential mortalities which would make it possible to obtain whatever result was wanted. The position is, however, not the same as in the case of migrations. In the first place for a given period there is a limit set by the medical knowledge of the time below which age specific death rates are unlikely to fall. There is also, obviously, an upper limit, corresponding to the worst health conditions known, which the rates are unlikely to exceed. Moreover, the differential mortality which would be necessary to induce a given change in the age structure could in many cases occur only in circumstances which are improbable and would, indeed, be morally shocking. It has to be assumed that every effort is being made to reduce death rates to the lowest possible level at all ages. This means, therefore, that there are certain variations in death rates which are far more likely to occur than others. Furthermore, it is evident from a recently published report [3] that fluctuations in mortality over time have always followed very much the same pattern.

This report shows that it is possible to construct a series of model life-tables such that when health conditions improve, age specific mortality rates run through the series of model tables, the more rapidly the speedier the improvement in health conditions.

Table 14 gives six model tables for expectations of life at birth ranging from twenty to seventy years, at ten year intervals. [4] An expectation of life of twenty to thirty years was at one time fairly common in all parts of the

[2] Health conditions can also have an effect on the number of births, an effect which is reflected in the fertility index.

[3] *Age and Sex Patterns of Mortality;* United Nations publication (Sales No.: 1955.XIII.9).

[4] In point of fact, the last two tables relate to expectations of life at birth of 60.4 and 70.2 years.

TABLE 14. — SURVIVORS TO VARIOUS AGES (l_x) PER 100 000 BIRTHS OF EACH SEX, ACCORDING TO MODEL LIFE TABLES FOR SIX VALUES OF EXPECTATION OF LIFE AT BIRTH (e_x^o)

Sex and age (in years)	*Expectation of life at birth (in years)*					
	20	*30*	*40*	*50*	*60.4*	*70.2*
Male						
0	100 000	100 000	100 000	100 000	100 000	100 000
1	66 769	74 441	80 427	85 622	91 553	97 033
5	48 876	62 201	72 050	80 180	88 513	96 087
10	44 523	58 871	69 672	78 599	87 579	95 697
20	39 182	54 123	65 943	75 900	85 831	94 842
30	32 226	47 064	59 888	71 240	82 744	93 399
40	24 198	39 207	53 321	66 247	79 336	91 490
50	15 307	29 761	44 894	59 345	73 900	87 610
60	7 900	19 353	33 603	48 466	64 008	78 710
70	2 975	9 329	19 466	31 847	46 000	60 227
80	483	2 143	5 993	12 198	20 646	30 322
Female						
0	100 000	100 000	100 000	100 000	100 000	100 000
1	69 324	76 627	82 441	87 625	92 941	97 663
5	50 372	63 834	73 805	82 136	90 044	96 860
10	45 703	60 294	71 307	80 515	89 160	96 568
20	39 519	54 843	67 090	77 615	87 488	95 926
30	31 724	46 994	60 539	72 940	84 686	94 786
40	23 316	38 700	53 698	67 981	81 511	93 136
50	15 648	30 452	46 318	62 064	77 105	90 089
60	9 134	21 451	36 706	53 076	69 302	83 642
70	3 920	11 420	23 067	37 747	53 770	68 831
80	743	2 970	7 898	16 086	27 082	38 977

world and is still common today in many under-developed countries, whereas the present expectation of life in economically advanced countries is between sixty and seventy years. The series of expectations of life used in table 14 thus in a sense reflect the history of mankind during the last two hundred years.

Different countries are at different stages of this development. It is assumed that countries which still have some way to go before attaining an expectation of life of seventy years, the figure corresponding to the present state of medical knowledge and the economic level of the developed countries, will pass through the various mortality experiences to which the model tables refer. The pattern is, of course, a very general one and in practice experience may not be in accordance with the tables in some cases. It is assumed, however, that the divergences will be only temporary and in a sense be abnormal and that they will ultimately disappear. In other words, the series of tables in table 14 represents the *normal* evolution of the mortality decline which accompanies the improvement of health conditions; this evolution may be temporarily subject to variations in one direction or the other.

Each of the model tables is characterized by its expectation of life. This figure determines the age specific mortality rates. It is assumed that when a certain expectation of life is observed in a population, the age specific mortality rates are those of the model table having that expectation of life. It will be seen that the approach is highly theoretical; it is obvious that the same expectation of life may in fact be observed with different series of age specific mortality rates and consequently different survivorship tables. It is assumed that these different possible series are distributed about a central series and it is this central series which is associated with the expectation of life considered.

(b) *Reproductive behaviour of couples*

The reproductive behaviour of couples affects age structure only through the births in which it results. The average number of children per completed family or, more accurately, the average number of children per woman past reproductive age is the magnitude which determines the number of births. If only female children are counted, this index is the conventional gross reproduction rate. In this report, therefore, each fertility level will be denoted by the corresponding gross reproduction rate. The way in which this gross reproduction rate is obtained, e. g., through early marriage and relatively low marital fertility or through late marriage and high fertility in marriage will be disregarded. We are concerned only with the end result. [5]

Thus for the present purposes it is assumed that a set of given demographic conditions is characterized by the two values, expectation of life at birth (E) and gross reproduction rate (R). It is assumed that for any combination of the two values (E,R) there corresponds a given demographic situation, and *vice-versa*.

Countries with very high fertility have gross reproduction rates between 3 and 4 while the economically developed countries which practice the restriction of births have reproduction rates between 1 and 1.5. Thus it can be said that in practice variations in reproduction in the human species are reflected by variations in the gross reproduction rate between 1 and 4. This range of variations may therefore be considered comparable with the variation in expectation of life from twenty to seventy years.

2. *Independence of the factors*

Before proceeding further it must be considered whether variations in mortality and fertility can be regarded as independent. Only if they were would it be possible to separate the effects of these two factors on age structure.

At first sight it would seem apparent that the two factors are not independent. It is evident, for instance, that the reduction of fertility leads to a reduction of mortality, for a variety of reasons. First, if fewer children are born, the risks of maternal deaths following childbirth are reduced. It is also known that infant mortality increases with the number of children in the family. [6] Finally, it is a commonplace that more people die of epidemic diseases where the number of persons living in a single household is greater. A reduction in the size of the family thus makes epidemics less deadly. [7]

Further, a decline in mortality seems likely to lead to a decline in fertility. The reproductive behaviour of couples seems *a priori* to be determined by the number of children who survive, not by the number of children born. For a given fertility level, when mortality declines, the number of surviving children increases. In other words, the family dependency "burden" increases, and if the increase is very great, only a decline in fertility can make the burden tolerable by reducing it.

It would therefore seem *a priori* that variations in fertility are not independent of variations in mortality and *vice-versa*. This is, however, contradicted by experience, at least in part. In practice, many populations have been observed and are still to be observed in which mortality declines without any substantial change in fertility. The examples of Taiwan and Costa Rica, the subjects of tables 12 and 13, are particularly striking. Most of the under-developed countries—all those in

[5] It was seen earlier that in the case of mortality, the same expectation of life could correspond to different series of age-specific mortality rates. Similarly, the same gross reproduction rate may be obtained with different series of age-specific fertility rates. It has been accepted as an observed fact that the series of age-specific fertility rates were always such that the average age of mothers at the birth of their children was about 27 1/2 years.

[6] The correct interpretation of this fact is disputed. It would appear, at least in the developed countries, that it is not the number of children which operates directly but rather the propensity to have a large family. In other words the first children in families which will become large show a higher infant mortality than the first children in families which will not become large. Whatever the interpretation adopted, it is a fact that a decline in fertility brings with it a decline in infant mortality.

[7] Genetic factors may also play a certain part. The risk of transmitting hereditary defects increases with the number of children in the family. In the same way, a reduction of the size of the family, by decreasing the number of cousins, reduces the probability of the occurrence of consanguineous marriages which, as is known, unmask lethal genes that would otherwise remain latent and without effect.

in which mortality has been declining over the past ten years—fall within this category. Although expectation of life at birth has in some cases increased by more than ten years, fertility appears to show no sign of declining. Examples of contrary movements, in which fertility declines without any change in mortality, are more difficult to find. In practice the reduction of natality has hitherto always been a concomitant of economic progress, which means that it has always accompanied a reduction of mortality. It should be noted, however, that the facts mentioned earlier regarding a reduction of mortality provoked by a decline in fertility have never in fact had much effect on the mortality level. Again, advances in medical knowledge have considerably reduced the risk of death following childbirth as well as the risk of contagion in large families.

On the basis of the cases observed, it may be concluded that variations in mortality and fertility both are and are not independent, in other words, that they are independent only within certain limits. It is obvious that if mortality declines substantially, the increase in the family dependency burden will ultimately lead to a decline in fertility, but experience shows that large variations in mortality can occur before this happens. It can therefore be assumed, at least as a working hypothesis, that variations of mortality and fertility are independent, subject to reconsideration of this assumption at a later stage and bearing in mind that the association of high mortality with low fertility or of high fertility with low mortality is improbable. [8]

3. *A basic difficulty*

The method of measuring the effects of variations in mortality and fertility on age structure is now evident. For example, to measure the effect of a reduction of mortality such that expectation of life at birth increases from E_1 to E_2, we select a gross reproduction rate R_1, and determine the age composition corresponding to the conditions (E_1 R_1) and (E_2 R_1). Comparison of these age compositions reveals the effect of the transition from E_1 to E_2 at the level of fertility of R_1. Similar comparisons could obviously also be made for different levels of fertility. Here, however, a fundamental difficulty arises. The fact that the expectation of life and gross reproduction rate in a population assume the values E_1 and R_1 respectively is not sufficient to determine the age structure. The age structure depends not only on E_1 and R_1 but also on the past values of these two factors. In other words, the age structure of a population in which the expectation of life and the gross reproduction rate remain constant at the level E_1 and R_1 will vary as a result of past changes in the expectation of life and the gross reproduction rate the influence of which will, however, progressively diminish with the passage of time. Ultimately, a time comes when the effect of the past is negligible and we arrive at what is called a stable state, characterized by a constant age structure σ_1 and a constant annual rate of natural increase r_1.

4. *The method of stable populations*

In order to apply the method, the principle of which has been given, it is necessary, therefore, to start from a state in which the population is "purified" of the effects of the past; this state is characterized by the three values : E_1 ,R_1 and σ_1. Starting from this state one of the two factors, expectation of life and gross reproduction rate, is varied, the other remaining constant. The way in which the population will develop under the assumption adopted can then be worked out. This is, of course, the procedure followed in calculating population projections. Naturally, the selected factor cannot be varied indefinitely. It is assumed that it will eventually be stabilized at a level different from the initial level. Thus, after a certain time, a new stable state will be arrived at, characterized, if expectation of life is taken to have increased from E_1 to E_2 by E_2 R_1 σ_2, or, if the gross reproduction rate is taken to have increased from R_1 to R_2, by the value E_1 R_2 σ'_2.

Comparison of the age structure of the stable population at the starting point, σ_1, with the age structure of the stable populations at the terminal point σ_2 or σ'_2, will in itself furnish very useful information on the effects respectively of the transition from E_1 to E_2 or from R_1 to R_2. However, the stable population corresponding to a given demographic situation can be determined directly without calculating the projection indicated. This greatly simplifies the calculation and enables us to make calculations for a greater number of assumptions.

Naturally, however, the information derived from the comparison of stable populations must be supplemented by a study of what occurs during the transition from one stable population to another. The method will then be applied in two stages:

(*a*) A comparison of different stable populations.

(*b*) A study of the transition from one stable population to another.

5. *The method of population projections*

A slightly different method can also be used in which the population projections mentioned above are actually calculated. We start with a real population in which the demographic conditions are measured by E_1 R_1, the age structure being S_1.

(*a*) Using this as a starting point, a population projection is calculated in which E_1 and R_1 are constant. The age structure varies and we have a series of age structures S_1, S'_1, $S''_{1'}$, tending towards σ'_1.

(*b*) It is assumed that one of the factors varies, the other remaining constant, e. g. that expectation of life passes from E_1 to E_2 while the gross reproduction rate remains constant at R_1. From the same starting point as in the previous case, a new projection is calculated. We then have a series of age structures S_1, S'_2, S''_2, tending towards σ'_2.

By comparing the two series we measure the effect of the transition from E_1 to E_2.

[8] It is difficult to say exactly what should be understood by high or low mortality and fertility. What this statement amounts to is that one should not accept without question results obtained from the consideration of populations where low values for one of these factors are associated with high values for the other.

TABLE 15. — COMPOSITION BY BROAD AGE GROUPS AND CRUDE VITAL RATES OF MODEL STABLE POPULATIONS CORRESPONDING TO DIFFERENT LEVELS OF MORTALITY [a]

Expectation of life at birth (in years)	Percentage of stable population			Crude rates (per 1 000)		
	0-14 years	15-59 years	60 years and over	Birth	Death	Natural increase
			Gross reproduction rate 4.0			
20	45.2	52.4	2.4	63.8	53.0	10.8
30	48.2	49.2	2.6	59.8	35.3	24.5
40	50.0	47.3	2.7	57.3	24.1	33.2
50	51.5	45.8	2.7	55.7	16.2	39.5
60.4	52.9	44.4	2.7	54.1	9.4	44.7
70.2	54.1	43.3	2.6	52.7	4.1	48.6
			Gross reproduction rate 3.0			
20	38.5	57.6	3.9	50.5	50.2	0.3
30	41.3	54.5	4.1	47.7	33.7	14.0
40	43.1	52.5	4.4	46.0	23.3	22.7
50	44.6	50.9	4.5	44.9	15.8	29.1
60.4	46.0	49.6	4.4	43.8	9.6	34.2
70.2	47.3	48.4	4.3	42.9	4.8	38.1
			Gross reproduction rate 2.5			
20	34.1	60.7	5.2	42.8	49.1	— 6.3
30	36.9	57.6	5.5	40.6	33.2	7.4
40	38.5	55.6	5.9	39.3	23.2	16.1
50	40.0	53.9	6.1	38.4	16.0	22.4
60.4	41.4	52.6	6.0	37.7	10.1	27.6
70.2	42.7	51.4	5.9	37.0	5.5	31.5
			Gross reproduction rate 2.0			
20	28.9	64.0	7.1	34.2	48.6	— 14.4
30	31.4	60.9	7.7	32.7	33.6	— 0.9
40	32.9	58.8	8.3	31.7	23.7	8.0
50	34.2	57.2	8.6	31.1	16.8	14.3
60.4	35.6	55.8	8.6	30.6	11.1	19.5
70.2	36.8	54.7	8.5	30.1	6.8	23.3
			Gross reproduction rate 1.5			
20	22.6	66.9	10.5	24.8	49.7	— 24.9
30	24.7	63.8	11.5	23.8	35.0	— 11.2
40	25.9	61.6	12.5	23.1	25.6	— 2.5
50	27.0	60.0	13.0	22.7	18.8	3.9
60.4	28.2	58.7	13.1	22.5	13.5	9.0
70.2	29.3	57.7	13.0	22.3	9.4	12.9
			Gross reproduction rate 1.0			
20	14.8	68.3	16.9	14.6	54.4	— 39.8
30	16.3	65.0	18.7	14.0	39.9	— 25.9
40	17.0	62.6	20.4	13.6	30.9	— 17.3
50	17.8	60.7	21.5	13.4	24.3	— 10.9
60.4	18.7	59.4	21.9	13.3	19.0	— 5.7
70.2	19.5	58.6	21.9	13.3	15.1	— 1.8

[a] The figures in table 15 are the same as those in table 16. They are arranged in table 15 in such a way as to make clear the effects of a reduction of mortality at a given level of fertility.

TABLE 16. — COMPOSITION BY BROAD AGE GROUPS AND CRUDE VITAL RATES OF MODEL STABLE POPULATIONS CORRESPONDING TO DIFFERENT LEVELS OF FERTILITY [a]

Gross reproduction rate	Percentage of stable population			Crude rates (per 1 000)		
	0-14 years	15-59 years	60 years and over	Birth	Death	Natural increase
			Expectation of life at birth: 20 years			
4.0	45.2	52.4	2.4	63.8	53.0	10.8
3.0	38.5	57.6	3.9	50.5	50.2	0.3
2.5	34.1	60.7	5.2	42.8	49.1	— 6.3
2.0	28.9	64.0	7.1	34.2	48.6	— 14.4
1.5	22.6	66.9	10.5	24.8	49.7	— 24.9
1.0	14.8	68.3	16.9	14.6	54.4	— 39.8
			Expectation of life at birth: 30 years			
4.0	48.2	49.2	2.6	59.8	35.3	24.5
3.0	41.3	54.5	4.1	47.7	33.7	14.0
2.5	36.9	57.6	5.5	40.6	33.2	7.4
2.0	31.4	60.9	7.7	32.7	33.6	— 0.9
1.5	24.7	63.8	11.5	23.8	35.0	— 11.2
1.0	16.3	65.0	18.7	14.0	39.9	— 25.9
			Expectation of life at birth: 40 years			
4.0	50.0	47.3	2.7	57.3	24.1	33.2
3.0	43.1	52.5	4.4	46.0	23.3	22.7
2.5	38.5	55.6	5.9	39.3	23.2	16.1
2.0	32.9	58.8	8.3	31.7	23.7	8.0
1.5	25.9	61.6	12.5	23.1	25.6	— 2.5
1.0	17.0	62.6	20.4	13.6	30.9	— 17.3
			Expectation of life at birth: 50 years			
4.0	51.5	45.8	2.7	55.7	16.2	39.5
3.0	44.6	50.9	4.5	44.9	15.8	29.1
2.5	40.0	53.9	6.1	38.4	16.0	22.4
2.0	34.2	57.2	8.6	31.1	16.8	14.3
1.5	27.0	60.0	13.0	22.7	18.8	3.9
1.0	17.8	60.7	21.5	13.4	24.3	— 10.9
			Expectation of life at birth: 60.4 years			
4.0	52.9	44.4	2.7	54.1	9.4	44.7
3.0	46.0	49.6	4.4	43.8	9.6	34.2
2.5	41.4	52.6	6.0	37.7	10.1	27.6
2.0	35.6	55.8	8.6	30.6	11.1	19.5
1.5	28.2	58.7	13.1	22.5	13.5	9.0
1.0	18.7	59.4	21.9	13.3	19.0	— 5.7
			Expectation of life at birth: 70.2 years			
4.0	54.1	43.3	2.6	52.7	4.1	48.6
3.0	47.3	48.4	4.3	42.9	4.8	38.1
2.5	42.7	51.4	5.9	37.0	5.5	31.5
2.0	36.8	54.7	8.5	30.1	6.8	23.3
1.5	29.3	57.7	13.0	22.3	9.4	12.9
1.0	19.5	58.6	21.9	13.3	15.1	— 1.8

[a] The figures in table 16 are the same as those in table 15. They are arranged in table 16 in such a way as to make clear the effects of a decline in fertility at a given level of mortality.

C. The results

1. *The method of stable populations*

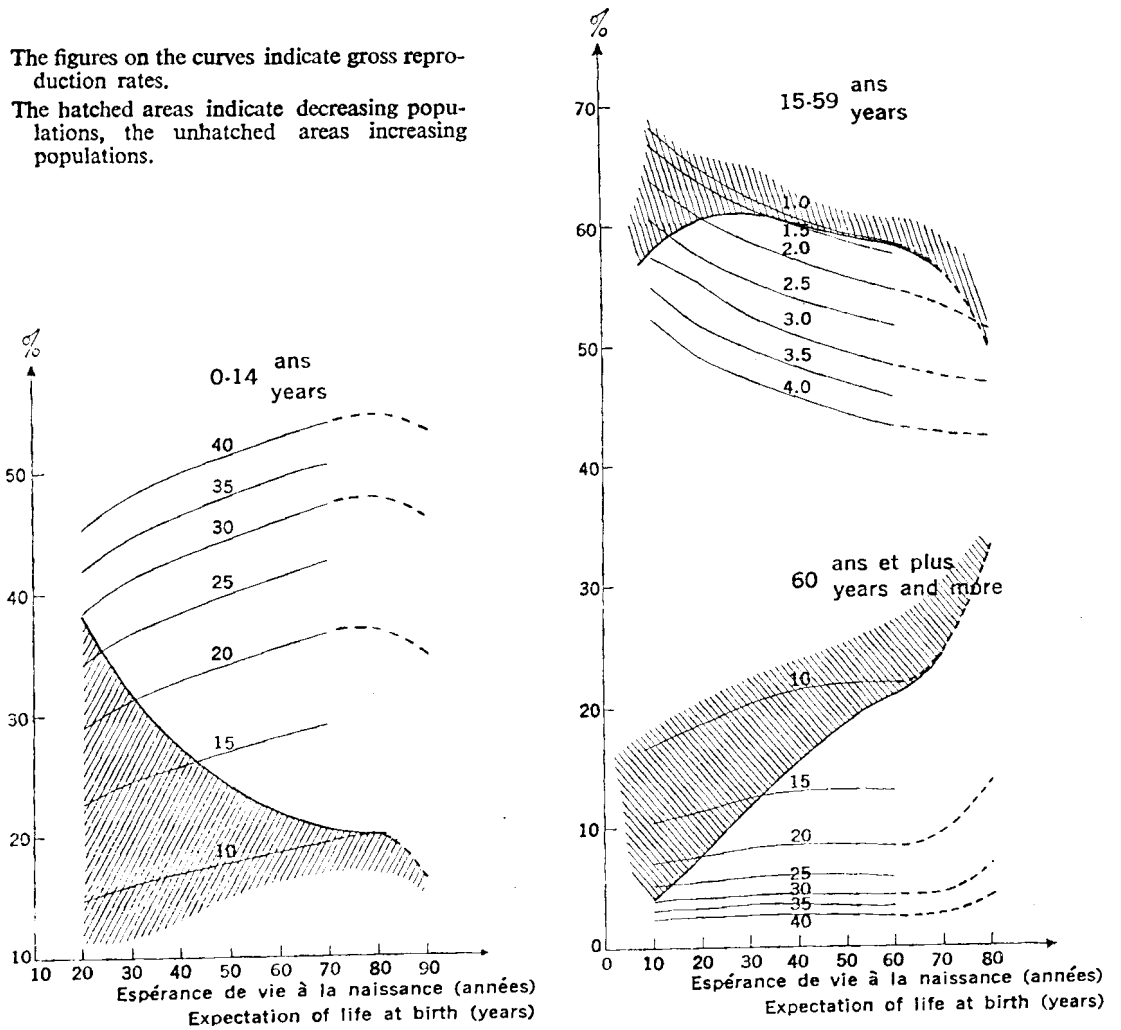
We will first consider the results obtained using the first method, i. e., the method of stable populations. Thirty-six stable populations have been calculated for the six model life tables in table 14, associated with six gross reproduction rates ranging from 1 to 4 (1.0, 1.5, 2.0, 2.5, 3.0 and 4.0). To simplify comparison, the structures by broad age groups of these thirty-six populations are shown in two tables. Table 15 shows the effect of the reduction of mortality. For each level of fertility it is possible to see the effect on age structure of an extension of the expectation of life from twenty to seventy years. Table 16 makes use of the same figures as table 15 but regroups them so as to make clear the effects of the reduction of fertility. The two graphs (3 and 4) illustrate the tables.

It has been said that certain combinations of fertility and mortality are unlikely to occur. It is possible to be a little more specific. For each level of fertility there is a level of mortality above which the population will not continue to reproduce itself. We then have a decreasing stable population. The curve separating decreasing from increasing populations has been marked on the graphs. It can be assumed that decreasing populations are rarely found in practice. Attention can therefore be confined to that part of the curves in the unhatched area.

Graph 3 shows that reductions of mortality such as have occurred in the past led to an increase in the proportion of young people from 0-14 years, a decrease in the proportion of adults from fifteen to fifty-nine years and a very slight increase in the number of persons of sixty years and over. These variations are virtually independent of the level of fertility. With changing levels of fertility the curves remain parallel. If only increasing populations are considered, the proportion of aged persons remains practically unchanged when mortality varies. This proportion depends only on fertility. This result is shown particularly clearly by graph No. 4.

Graph No. 4 also shows that a decline in fertility reduces the proportion of young persons and increases the proportion of adults and of aged persons. Since in graphs 3 and 4 the curves for the same age-group are almost parallel, the effects of variations of mortality

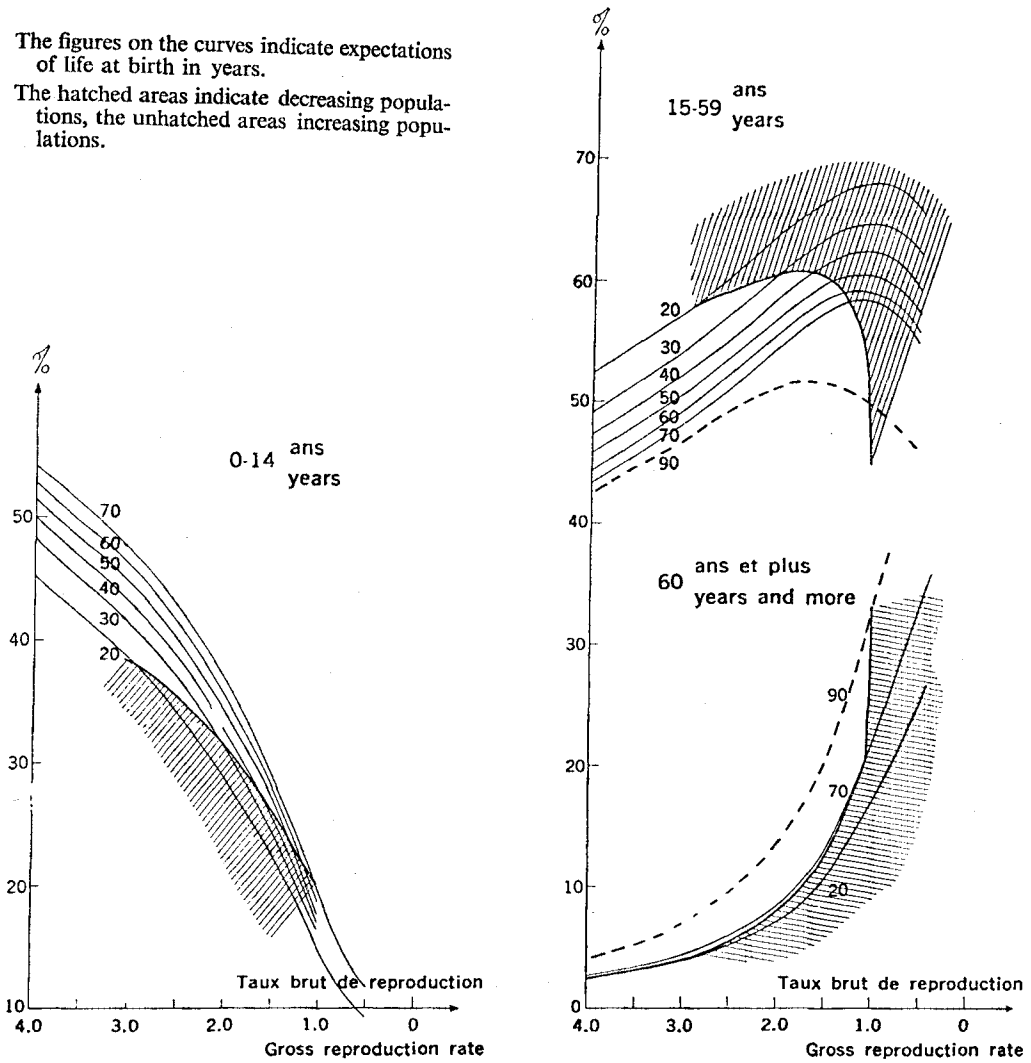
Graph 3. — Structure by broad age groups of various stable populations at different levels of mortality and fertility



GRAPH 4. — STRUCTURE BY BROAD AGE GROUPS OF VARIOUS STABLE POPULATIONS AT DIFFERENT LEVELS OF MORTALITY AND FERTILITY

The figures on the curves indicate expectations of life at birth in years.

The hatched areas indicate decreasing populations, the unhatched areas increasing populations.



and fertility can be regarded as strictly additive. Table 17 enables us to compare the total effects of the reduction of mortality and the reduction of fertility.

So much for the past. What of the future? To begin with mortality, four stable populations have been calculated, associating gross reproduction rates of 1, 2, 3 and 4 with the following hypothetical mortality: mortality nil up to 80 years, then increasing in such a way that the survivorship curve is zero at 100 years and linear from 80 to 100 years. The expectation of life at birth corresponding to this table is 90 years. The dotted parts of graph 3 and 4 represent the results of such a calculation. [9] Beyond 70 years an increase in the expectation of life has not the same effect as before 70 years.

(*a*) With an expectation of life a little higher than 70 years, the proportion of young people reaches a

[9] In graph 4 the curve corresponding to the hypothetical life-table has not been reproduced for young persons (0-14 years). It would fall between the curves for expectations of life of 50 and 70 years and would unnecessarily complicate the graph.

TABLE 17. — EFFECT OF THE REDUCTION OF MORTALITY AND THE REDUCTION OF FERTILITY ON THE AGE STRUCTURE OF STABLE POPULATIONS

	Age groups in years		
	0-14	*15-59*	*60 and over*
Percentage of stable population at starting point [a]. . .	45.2	52.4	2.4
Effect of decline in mortality [b].	+ 8.6	— 9.3	+ 0.7
Effect of decline in fertility [c].	— 34.0	+ 15.1	+ 18.9
Percentage of stable population at point of arrival [d]. .	19.8	58.2	22.0

[a] Stable population at starting point having an expectation of life at birth of twenty years and a gross reproduction rate of 4.0.

[b] Increase in expectation of life at birth from twenty to seventy years.

[c] Decrease in gross reproduction rate from 4.0 to 1.0.

[d] Stable population at the terminal point having an expectation of life at birth of seventy years and a gross reproduction rate of 1.0.

maximum and then declines. It may be said that the continuation of the decline in mortality which may be expected to take place in coming years in the developed countries will not greatly modify the proportion of young persons. [10]

(*b*) A decline in mortality beyond the level corresponding to an expectation of life of 70 years accelerates the decline in the proportion of adults, at least for relatively low fertilities (gross reproduction rate between 1 and 2).

(*c*) Before an expectation of life of 70 years is reached the decline in mortality, as we have seen, has little effect on the proportion of aged persons. After 70 years this decline causes a rapid increase in the proportion.

The reduction of mortality beyond the level reached in the developed countries will lead to aging at the apex of the pyramid; there will be little change at the base and a decline in the proportion of adults.

We must now consider the effects of a decline in fertility below the level corresponding to a gross reproduction rate of 1.0. The corresponding populations are obviously decreasing. They are not, therefore, of any great practical interest. The case has nevertheless sometimes been envisaged with reference to the populations of the developed countries. [11] By associating the six model life-tables with a gross reproduction rate of 0.5, six new stable populations, the age structures of which are shown in Graph 4, have been calculated. Continuation of the decline in fertility to a level below that corresponding to a gross reproduction rate of 1.0 does not affect the foregoing conclusions, except as regards the proportion of adults. This proportion reaches a maximum when the gross reproduction rate is about 1.0. Variations in fertility about this level therefore have very little effect on the proportion.

2. *Transition from one stable population to another*

Nevertheless, as already stated, comparison of stable populations, however interesting in itself, does not allow us to reach any final conclusion. It is therefore necessary to consider what happens in the transition from the one to the other. There can be no question of considering all the possible transitions of the thirty-six stable populations in Table 15 taken in pairs. Only two cases are considered. Starting with a stable population

[10] Near a maximum or a minimum a function always varies very little.

[11] The populations of some under-developed countries have decreased at certain periods, but the decrease was due not to very low fertility but to very high mortality and no doubt also to heavy emigration.

TABLE 18. — TRANSITION FROM ONE STABLE POPULATION TO ANOTHER STABLE POPULATION, WITH CONSTANT MORTALITY AND DECLINING FERTILITY

Time elapsed from initial point	*Percentage of population at the end of each period*			*Average expectation of life and average rates for each period*				
	0-14 years	*15-59 years*	*60 years and over*	*Expectation of life at birth (in years)*	*Gross reproduction rate*	*Birth rate (per thousand)*	*Mortality rate (per thousand)*	*Annual rate of natural increase (per thousand)*
Initial stable population	43.1	52.5	4.4	40.0	3 000	46.0	23.3	22.7
Years								
0- 4.	42.7	52.9	4.4	40.0	2 875	44.2	22.9	21.3
5- 9.	41.5	54.0	4.5	40.0	2 625	40.9	22.3	18.6
10-14.	39.6	55.7	4.7	40.0	2 375	38.0	21.8	16.2
15-19.	37.4	57.7	4.9	40.0	2 125	35.4	21.4	14.0
20-24.	35.8	59.1	5.1	40.0	2 000	34.8	21.4	13.4
25-29.	35.2	59.4	5.4	40.0	2 000	34.7	21.9	12.8
30-34.	35.2	59.2	5.6	40.0	2 000	35.0	22.1	12.9
35-39.	34.9	59.2	5.9	40.0	2 000	33.4	22.0	11.4
40-44.	34.1	59.0	6.1	40.0	2 000	32.0	22.0	10.0
45-49.	33.1	60.2	6.7	40.0	2 000	31.4	22.2	9.2
50-54.	32.8	60.0	7.2	40.0	2 000	32.2	23.0	9.2
55-59.	33.0	59.3	7.7	40.0	2 000	32.9	23.2	9.7
60-64.	33.5	58.4	8.1	40.0	2 000	32.6	23.5	9.1
65-69.	33.4	58.2	8.4	40.0	2 000	31.5	23.2	8.3
70-74.	32.8	58.8	8.4	40.0	2 000	30.6	23.5	7.1
75-79.	32.3	59.4	8.3	40.0	2 000	31.1	23.7	7.4
80-84.	32.6	59.2	8.2	40.0	2 000	32.3	23.7	8.6
Final stable population	32.9	58.8	8.3	40.0	2 000	31.7	23.7	8.0

TABLE 19. — TRANSITION FROM ONE STABLE POPULATION TO ANOTHER STABLE POPULATION, WITH CONSTANT FERTILITY AND DECLINING MORTALITY

Time elapsed from initial point	Percentage of population at the end of each period			Average expectation of life and average rates for each period				
	0-14 years	15-59 years	60 years and over	Expectation of life at birth (per thousand)	Gross reproduction rate	Birth rate (per thousand)	Mortality rate (per thousand)	Annual rate of natural increase (per thousand)
Initial stable population	43.1	52.5	4.4	40.0	3 000	46.0	23.3	22.7
Years								
0- 4.	43.1	52.5	4.4	40.0	3 000	46.2	23.3	22.9
5- 9.	43.3	52.3	4.4	42.5	3 000	45.9	21.1	24.8
10-14.	43.6	51.9	4.5	45.0	3 000	45.6	19.2	26.4
15-19.	44.0	51.4	4.6	47.5	3 000	45.1	17.4	27.7
20-24.	44.2	51.1	4.7	50.0	3 000	44.4	15.6	28.8
25-29.	44.3	50.9	4.8	52.5	3 000	43.9	14.1	29.8
30-34.	44.5	50.7	4.8	55.0	3 000	43.8	12.6	31.2
35-39.	44.9	50.2	4.9	57.5	3 000	43.8	11.2	32.6
40-44.	45.4	49.7	4.9	60.4	3 000	43.6	9.8	33.8
45-49.	45.7	49.5	4.8	60.4	3 000	43.3	9.7	33.6
50-54.	45.7	49.5	4.8	60.4	3 000	43.0	9.7	33.3
55-59.	45.5	49.7	4.8	60.4	3 000	43.1	9.7	33.4
60-64.	45.6	49.8	4.6	60.4	3 000	43.6	9.7	33.9
65-69.	45.9	49.5	4.6	60.4	3 000	44.1	9.7	34.4
70-74.	46.1	49.4	4.5	60.4	3 000	44.0	9.7	34.3
75-79.	46.1	49.4	4.5	60.4	3 000	43.6	9.6	34.0
80-84.	45.9	49.7	4.4	60.4	3 000	43.4	9.6	33.8
85-89.	45.8	49.8	4.4	60.4	3 000	43.1	9.6	33.5
90-94.	45.9	49.7	4.4	60.4	3 000	44.0	9.6	34.4
95-99.	46.1	49.5	4.4	60.4	3 000	44.2	9.6	34.6
Final stable population	46.0	49.6	4.4	60.4	3 000	43.8	9.6	33.2

corresponding to an expectation of life of 40 years and a gross reproduction rate of 3.0, we assume:

(*a*) constant mortality and declining fertility. It is assumed that the gross reproduction rate decreased from 3.0 to 2.0 in twenty-five years and then remained constant;

(*b*) constant fertility and declining mortality. It is assumed that the expectation of life at birth increased from 40 to 60 years in thirty-five years and then remained constant.

The left portion of graph 5, graphs 6 and 7, and tables 18 and 19 demonstrate the transition. No really new phenomenon is observable. The figures for age structure birth rate, mortality rate and rate of growth follow an even course from the initial to the final level. Where a drop in fertility is assumed, a few initial oscillations [12] are noted, but the stable level is reached very rapidly. [13] In short, the conclusions drawn from the comparison of stable populations remain valid.

3. "*Method of population projections*"

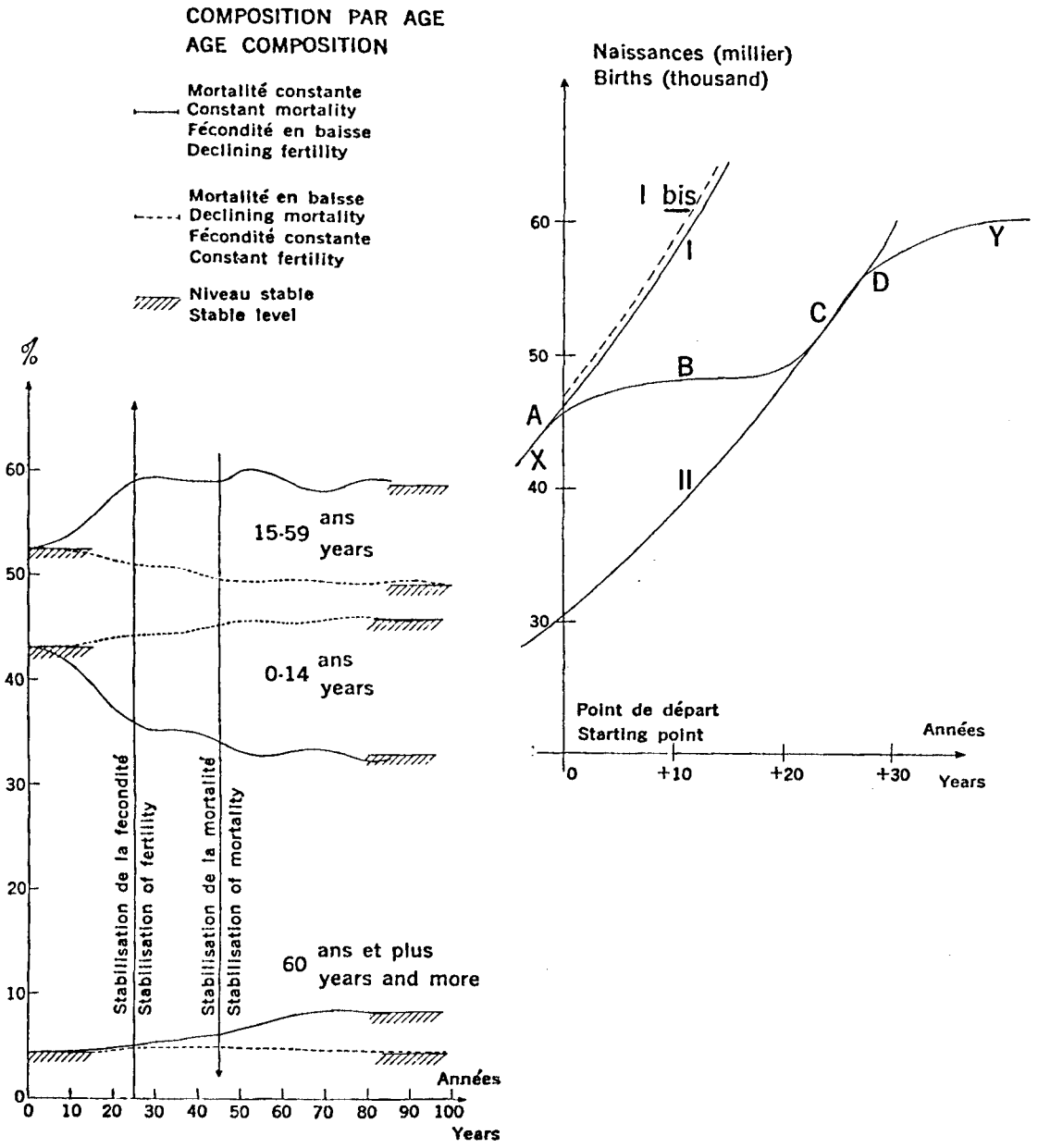
The results of the second method, the calculation of population projections, will now be considered. Although many projections have been made on various

[12] The reason why there are oscillations is easily explained and is clearly apparent from the right section of the graph. In the initial stable population (gross reproduction rate 3.0 and expectation of life forty years), births are shown by curve I (per 1 million inhabitants at time zero). If at time zero the gross reproduction rate should decline sharply from 3.0 to 2.0, births would follow curve II. Actually, a gradual decline has been assumed. Thus, two and a half years before the initial point the position is at A on curve I and twenty-five years later it is at C on curve II. In the intervening period, curve ABC is followed. Finally, births follow curve XABCDY. As may be seen, this curve shows an oscillation at the beginning which affects the future but is later absorbed as a result of the spread of births according to the age of the woman during the reproductive period.

If fertility is assumed to remain constant and mortality to decline, births follow curve I *bis*, which shows no oscillations.

[13] One interesting result may be noted in passing. Since the decline in mortality does not cause much variation in the age structure, the crude death and birth rates under assumption (*a*) constitute a suitable yardstick for the measurement of fertility and mortality in the transition corresponding to that assumption. In other words, the birth rate remains virtually constant and the mortality rate follows the variations in the expectation of life. Consequently, when mortality ceases to decline, the mortality rate also becomes stabilized. It follows that in a population where fertility is constant but mortality is declining, the relationship between the birth rate, the mortality rate, the rate of natural increase and the age structure is at all times the same as in a stable population. This, in fact, is the situation in many under-developed countries. Matters are quite different when fertility is declining. The age structure and the birth and mortality rates continue to change long after fertility has become stabilized.

GRAPH 5. — TRENDS IN AGE STRUCTURE AND ANNUAL BIRTHS DURING THE TRANSITION FROM ONE STABLE POPULATION TO ANOTHER STABLE POPULATION, ON THE BASIS OF TWO ASSUMPTIONS. [a]



[a] In the graph for births, the assumptions are as follows:

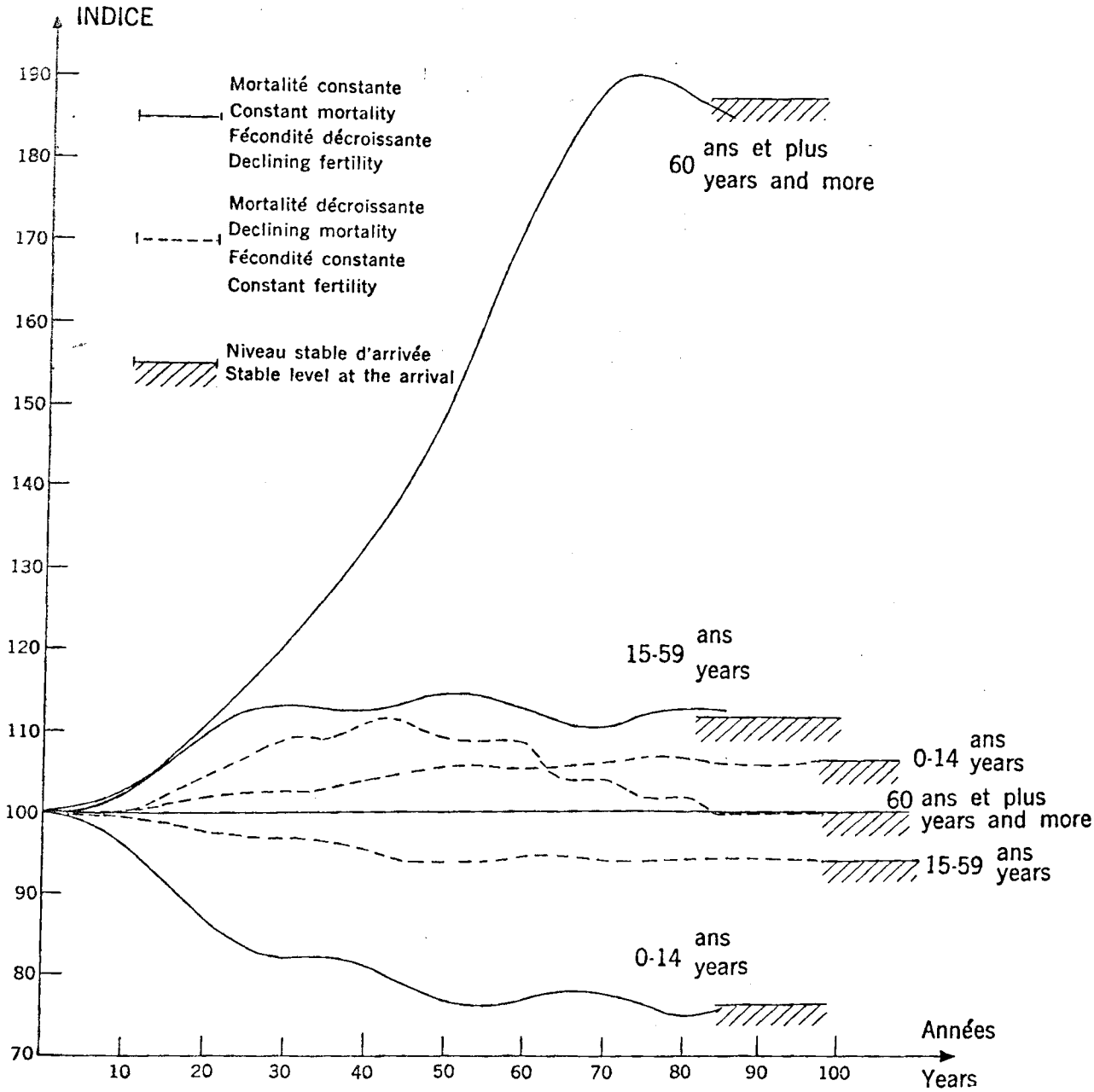
I. Initial stable population: gross reproduction rate = 3.0; expectation of life at birth = 40 years.

II. After a sharp decline in the gross reproduction rate from 3.0 to 2.0.

XABCDY. Gradual decline in the gross reproduction rate from 3.0 to 2.0.

Ibid. After a drop in the mortality rate.

GRAPH 6. — TRENDS IN AGE STRUCTURE DURING THE TRANSITION FROM A STABLE POPULATION, ON THE BASIS OF TWO ASSUMPTIONS

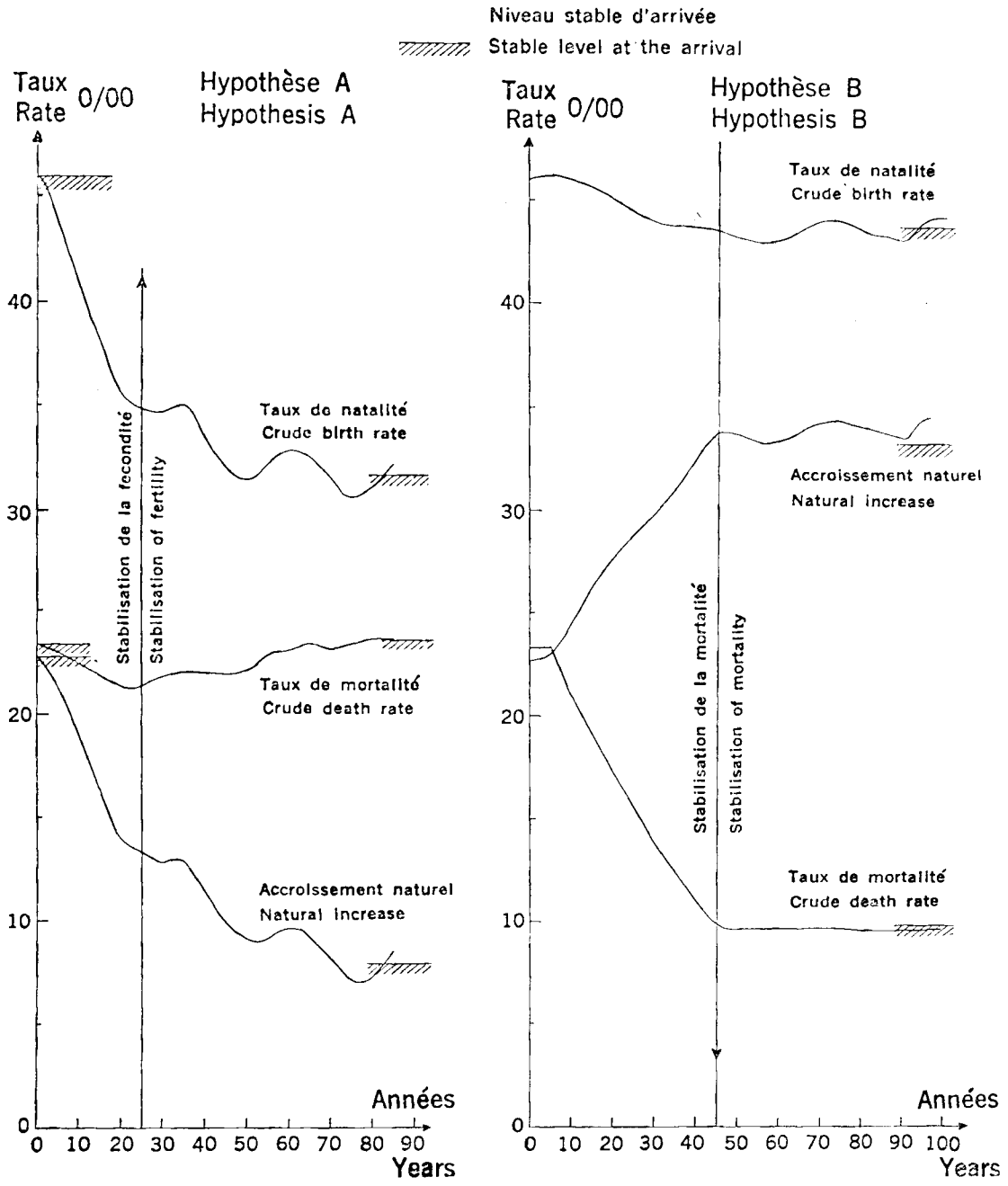


(Base 100 is the corresponding age-group of the initial stable population).

GRAPH 7. — TRENDS IN VITAL RATIO DURING THE TRANSITION FROM ONE STABLE POPULATION TO ANOTHER STABLE POPULATION, ON THE BASIS OF THE FOLLOWING TWO ASSUMPTIONS:

(A) DECLINING FERTILITY, CONSTANT MORTALITY;

(B) CONSTANT FERTILITY, DECLINING MORTALITY.



occasions, the method cannot be applied to all of them, because it requires the extension of the projections over a long period which generally goes beyond the purposes for which the calculations were made. Another requirement is that the projections must be made on the basis of many assumptions. We have selected three examples, none of which, however, is perfect.

(a) *First example: Great Britain.*

The Royal Commisssion, established in England during the Second World War to study the demographic situation of the United Kingdom, made sixteen population projections on the basis of widely different assumptions. [14] For our purposes, we shall use four of these assumptions, which in the Commission's report are numbered 6, 8, 10 and 11. The initial population is that of the year 1947, and the calculation is carried up to the year 2047.

The assumptions are stated in the following table:

TABLE 20. — ASSUMPTIONS ADOPTED FOR MAKING CERTAIN PROJECTIONS OF THE POPULATION OF GREAT BRITAIN

Assumption No.	*Mortality*	*Nuptiality*	*Fertility*
6	Constant	Constant	Constant
8	Declining	Constant	Constant
10	Declining	Constant	Declining
11	Declining	Constant	Increasing

In the three assumptions where mortality is declining, the decline was regarded as continuing for thirty years, viz. from 1947 to 1977, and the expectation of life at birth, for both males and females taken together, was regarded as rising from sixty-five to seventy-one years. After 1977, mortality was regarded as remaining at the level reached in 1977 (seventy-one years expectation of life at birth).

With regard to fertility, fertility rates by cohorts of marriages were used. In the four assumptions selected, nuptiality is constant at the average level for the period 1942-47. In the two assumptions based on constant fertility, the fertility rates by duration of marriage were regarded as remaining for the future at a level 5 per cent higher than the rates observed during the period 1935-38. The corresponding gross reproduction rate is about 0.98. In the two assumptions based respectively on declining fertility and increasing fertility, the fertility rates by duration of marriage were regarded as gradually increasing or decreasing until by 1967 they would be 20 per cent higher or 20 per cent lower than the rates used for the projection at constant fertility (assumption 8). As to the period after 1967, the rates for assumption 10 (declining fertility) were regarded as remaining at the same level, and the rates for assumption 11 (increasing fertility) were regarded as gradually tapering off and becoming stabilized about the year 2047 at a level 7.7 per cent higher than the level for assumption 8. [15]

A comparison of projection 6 (constant mortality and fertility) with projection 8 (declining mortality, constant fertility) serves to illustrate the effect of a decline in mortality. Projections 8 and 10, on the one hand, and 8 and 11, on the other differ only in their assumptions regarding fertility. A comparison of projections 8 and 10 therefore illustrates the effect of a decline in fertility, and a comparison of projections 8 and 11 the effect of an increase in fertility.

To begin with, the populations may in the year 2047 be regarded as having attained stability. The age structures for these populations should be similar to the age structures which, in the general pattern of stable populations, correspond to the values for expectation of life at birth and gross reproduction rate that are used in the various assumptions.

Table 21 shows that that is the case, but it also shows that the stable populations of the general pattern do not coincide exactly with the stable populations resulting from the projections. The differences noted are not surprising and emphasize the need for supplementing the method of stable populations by other methods of analysis.

The three right-hand columns of table 21 illustrate the differences in the results obtained by the two methods used. Where, for example, with an expectation of life of seventy-one years, a decline in fertility reduces the gross reproduction rate from 0.98 to 0.78, then, according as the projections or the general pattern are used, the proportion of young people from 0-14 years drops by 4.1 or 3.3 per cent and the proportion of old people increases by 5.4 or 4.2 per cent. Of particular interest is the fact that the declining mortality adopted by the Royal Commission for the purposes of its calculations resulted in an increase in proportion of old people, whereas the declining mortality used for the pattern of stable populations had virtually no effect on that proportion. The reason for this discrepancy is that the decline in mortality used for the projections is more favourable for the older age-groups than is the case with the general pattern and is less favourable for the younger age-groups.

A comparison of the entire range of the projections and not just of the final results demonstrates how the age structure varies throughout the process of change affecting fertility and mortality. Graph 8 represents the three broad age-groups used in projections 10 and 11, [16] the three corresponding age-groups of projection 8 being taken as a base of 100. [16] It is thus possible in

[14] *Papers of the Royal Commission on Population.* Vol. II. *Reports and Selected Papers of the Statistics Committee.* London: His Majesty's Stationery Office, 1950, pp. 213 *et seq.*

[15] According to the explanation given in the text accompanying the results of the projections, the basis for the calculations in the case of assumption 11 was that the fertility rates by duration of marriage for couples marrying after 1967 would remain constant at a level 20 per cent higher than the rates for assumption 8.

Actually, the results show that the calculation was made differently. This can easily be proved by computing the birth rates corresponding to these results (with the aid of table XI on page 251 of the publication cited). It then becomes apparent that a declining fertility was in fact used in the projections.

[16] It should be remembered that in the three projections 8, 10 and 11, mortality declines while nuptiality remains constant. Fertility is constant in projection 8, declining in projection 10 and rising in projection 11.

TABLE 21. — EFFECTS OF CHANGES IN MORTALITY AND FERTILITY ON THE AGE COMPOSITION OF THE POPULATION OF GREAT BRITAIN, AS MEASURED BY THE METHODS USED FOR THE PROJECTIONS AND THE GENERAL PATTERN OF STABLE POPULATIONS

Characteristics of the population	Number of the assumption				Increase (+) or decrease (—) caused by the factors indicated		
	6	8	10	11	Decline in mortality (8 — 6)	Decline in fertility (10 — 8)	Rise in fertility (11 — 8)
Percentage of the population:							
Aged 0-14 years							
Projections (of the year 2047)	19.4	19.1	15.0	21.1	—0.3	—4.1	+2.0
Stable populations	18.8	19.4	16.1	20.8	+0.6	—3.3	+1.4
Aged 15-59 years:							
Projections (of the year 2047)	59.4	57.8	56.5	58.5	—1.6	—1.3	+0.7
Stable populations	58.9	58.5	57.6	58.8	—0.4	—0.9	+0.3
Aged 60 years and over:							
Projections (of the year 2047)	21.2	23.1	28.5	20.4	+1.9	+5.4	—2.7
Stable populations	22.3	22.1	26.3	20.4	—0.2	+4.2	—1.7
Expectation of life at birth (years)	65	71 [a]	71 [a]	71 [a]	+6	—	—
Gross reproduction rate	0.98	0.98	0.78 [b]	1.06 [c]	—	—0.20	+0.08

[a] After the decline in mortality has stopped.
[b] After the decline in fertility has stopped.
[c] After the rise in fertility has stopped.

this way to measure the effects of variations in fertility.

The same conclusions may be drawn from the study of the transition from one stable population to another stable population:

(*a*) No new phenomenon appears. Stability is attained through a series of steadily diminishing oscillations.

(*b*) After stabilization of fertility (in 1977), the age composition continues to change.

Graph 8 also shows the three broad age groups used in projection 6, the corresponding age groups of projection 8 being taken as a base of 100. It is thus possible in this way to study the effect of the decline in mortality. As has been said, the mortality assumed as representing mortality conditions in 1977 differs from that used in the model mortality tables. The resulting trend makes the population towards the apex of the pyramid slightly older and has virtually no effect on the proportion of young people and the proportion of adults.

(b) *Second example: France*

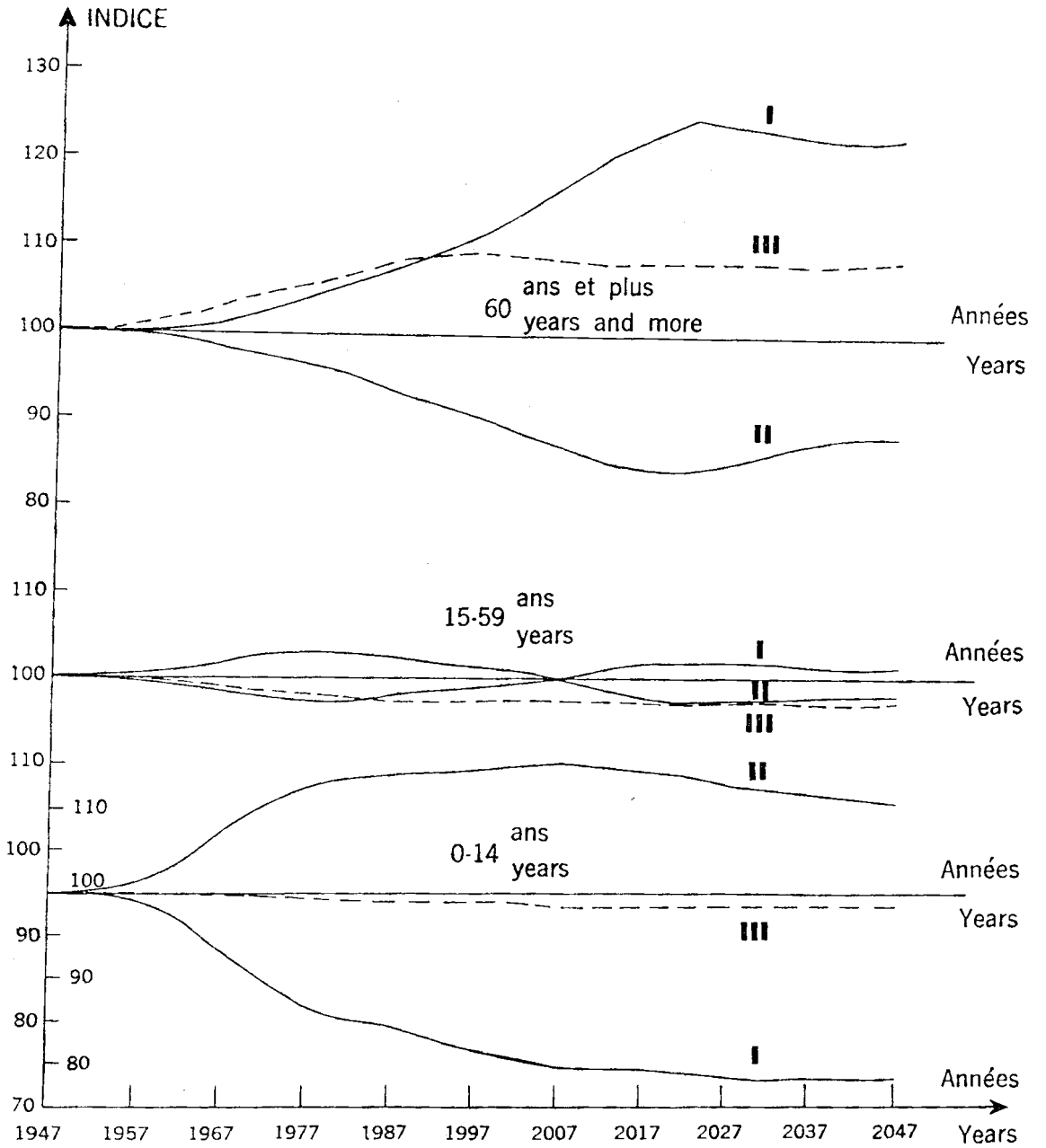
The projections calculated by M. Pierre Depoid [17] for the French population from 1946 to 2001 on the basis of two sets of assumptions will be used. Starting with an evaluation of the French population as of 1 January 1946, he calculated six projections corresponding to six levels of fertility, with mortality constant as shown in the French mortality table for the years 1933-38. In a second set of six projections in which the same base population and the same levels of fertility were used, he assumed that mortality would decline from 1946 to 1971 so that by 1971 it would reach the level of the Netherlands mortality table for the years 1931-40 and would then remain constant at that level. The levels of fertility adopted and the expectation of life at birth as used in the French and Netherlands tables are shown in table 22.

Each pair of projections: A_1 B_1, A_2 B_2, A_3 B_3, A_4 B_4, A_5 B_5, A_6 B_6 differs only in respect of the level of fertility. In each pair, fertility is the same for the two projections, but in one projection (A), mortality is assumed to be constant and in the other (B), declining. A comparison of the projections in each pair therefore enables the effect of the decline in mortality to be measured. The study on stable populations leads us to believe that the effect of a decline in mortality should not vary greatly at the different levels of fertility. We can therefore confine ourselves to the two end pairs: A_1 B_1 and A_6 B_6.

In projections A_1, A_2, A_3, A_4, A_5 and A_6, mortality is constant. A comparison of these projections therefore makes it possible to measure the effect of variations in fertility.

[17] Pierre Depoid, " Perspectives sur l'effectif de la population française jusqu'à la fin du 20e siècle ", *Journal de la Société de statistiques de Paris*. November-December 1948, pp. 444 *et seq.*

GRAPH 8. — EFFECT OF VARIATIONS IN FERTILITY AND MORTALITY ON THE AGE STRUCTURE OF THE POPULATION OF GREAT BRITAIN



I. Projection No. 10, taking projection No. 8 as a base figure of 100 (effect of the decline in fertility).
II. Projection No. 11, taking projection No. 8 as a base figure of 100 (effect of the rise in fertility).
III. Projection No. 8, taking projection No. 6 as a base figure of 100 (effect of the decline in mortality).
(For sources, see footnote 14, p. 35).

TABLE 22. — ASSUMPTIONS USED FOR THE CALCULATION OF PROJECTIONS OF THE FRENCH POPULATION

Symbol for the projections	Gross reproduction rate [a]	Expectation of life at birth (years) [b]
First series:		
A_1	0.805	58.7
A_2	0.923	58.7
A_3	1.041	58.7
A_4	1.159	58.7
A_5	1.277	58.7
A_6	1.395	58.7
Second series:		
B_1	0.805	66.3
B_2	0.923	66.3
B_3	1.041	66.3
B_4	1.159	66.3
B_5	1.277	66.3
B_6	1.395	66.3

[a] On the basis of the French mortality table for the years 1933-1938, these gross reproduction rates are equivalent to the following net reproduction rates respectively: 0.7, 0.8, 0.9, 1.0, 1.1, 1.2. The reason for carrying the gross reproduction rates to three decimal places is that the simple net reproduction rates were taken as the point of departure.

[b] For the first series, French table for the years 1933-1938; for the second series, Netherlands table for the years 1931-1940. In the projections of the second series, mortality declines over a period of twenty-five years from the level of the French table to that of the Netherlands table.

Just as was the case with Great Britain, however, the variations in fertility and mortality are slight as compared with the variations in the study on stable populations. Moreover, projections A_1, A_2 and A_3 lead to a decreasing population. Then, too, the projections extend over a period of only fifty years, which is too short for stability to be achieved. The limitation of the assumptions will therefore limit the results.

Our analysis here will start at the point where the calculations end, *viz.* the year 2001. Tables 23 and 24 show that the age structures resulting from the projections are similar to the age structures of the stable populations, which eventually result from the same gross reproduction rates and the expectation of life used in the projections. In making a comparison, however, it must be remembered that in the year 2001 the populations will not yet have attained complete stability.

Table 23 makes it possible to compare the two methods as regards the measurement of the effects of changes in fertility. The results are virtually the same, especially in view of the fact that in 2001 the populations resulting from the projections will not yet have achieved stability. The correspondence between the two methods is less satisfactory as regards the effect of a decline in mortality (see table 24). According to the projections, a decline in mortality produces aging at the apex and the base of the pyramid, but according to the pattern of stable populations, it results in a rejuvenation at the base of the pyramid. As in the case of Great Britain, the reason for this discrepancy is that the mortality tables used in the projections differ from those used in the pattern of stable populations. It should, however, be noted that, as an absolute value, the aging produced by the decline in mortality is not very significant (compare age structures A_1 B_1 and A_6 B_6 in table 24).

Graph No. 9 shows the intermediary stages. When fertility varies, there are again oscillations as in the study of the transition from one stable population to another stable population, [18] but no new phenomenon appears.

[18] The oscillations in this case produce angular points in the curves. That is because it was assumed in the calculations that fertility changed sharply from level to level.

TABLE 23. — EFFECTS OF CHANGES IN FERTILITY ON THE AGE COMPOSITION OF THE POPULATION OF FRANCE, AS MEASURED BY THE METHODS USED FOR THE PROJECTIONS AND THE GENERAL PATTERN OF STABLE POPULATIONS [a]

Characteristics of the population	Symbol for the projections						Increase (+) or decrease (—) caused by changes in fertility as compared with fertility in projection A_4				
	A_1	A_2	A_3	A_4	A_5	A_6	$A_1 - A_4$	$A_2 - A_4$	$A_3 - A_4$	$A_5 - A_4$	$A_6 - A_4$
Percentage of the population:											
Aged 0-14 years:											
Projections of the year 2001	15.7	18.3	20.8	*23.1*	25.2	27.2	— 7.4	— 4.8	— 2.3	+ 2.1	+ 4.1
Stable populations	15.6	17.3	19.2	*21.1*	23.2	25.5	— 5.5	— 3.8	— 1.9	+ 2.1	+ 4.4
Aged 15-59 years:											
Projections of the year 2001	59.9	60.5	60.7	*60.6*	60.3	59.9	— 0.7	— 0.1	+ 0.1	— 0.3	— 0.7
Stable populations	58.6	59.2	59.7	*59.9*	59.8	59.5	— 1.3	— 0.7	— 0.2	— 0.1	— 0.4
Aged 60 years and over:											
Projections of the year 2001	24.1	21.2	18.5	*16.3*	14.5	12.9	+ 7.8	+ 4.9	+ 2.2	— 1.8	— 3.4
Stable populations	25.8	23.5	21.1	*19.0*	17.0	15.0	+ 6.8	+ 4.5	+ 2.1	— 2.0	— 4.0
Gross reproduction rate	0.805	0.923	1.041	*1.159*	1.277	1.395					

[a] It is assumed that mortality remains constant at the level of the French mortality table for the years 1933-1938 (expectation of life at birth: 58.7 years).

TABLE 24. — EFFECTS OF THE DECLINE IN MORTALITY ON THE AGE COMPOSITION OF THE POPULATION OF FRANCE, AS MEASURED BY THE METHODS USED FOR THE PROJECTIONS AND THE GENERAL PATTERN OF STABLE POPULATIONS

Characteristics of the population	*Symbol for the projections*				*Increase (+) or decrease (—) caused by the decline in mortality*	
	B_1	B_6	A_1	A_6	*With low fertility* ($B_1 - A_1$)	*With high fertility* ($B_6 - A_6$)
Percentage of the population:						
Aged 0-14 years:						
Projections of the year 2001.	15.3	26.9	15.7	27.2	— 0.4	— 0.3
Stable populations . .	16.2	26.4	15.6	25.5	+ 0.6	+ 0.9
Aged 15-59 years:						
Projections of the year 2001.	58.4	59.0	59.9	59.9	— 1.5	— 0.9
Stable populations . .	57.8	58.6	58.6	59.5	— 0.8	— 0.9
Aged 60 years and over:						
Projections of the year 2001.	26.3	14.1	24.5	12.9	+ 2.2	+ 1.2
Stable populations . .	26.0	15.0	25.8	15.0	+ 0.2	0.0
Gross reproduction rate . .	0.805	1.395	0.805	1.395		
Expectation of life at birth (years):						
At the beginning	58.7	58.7	58.7	58.7		
At the end.	66.3	66.3	58.7	58.7		

Although the curves representing persons aged sixty years and over clearly show that stability will not yet have been attained in the year 2001, it should not by that time be far off.

(c) *Third example: United States*

Projections differing somewhat in kind from those used in the two preceding examples but also useful for our purpose were drawn up for the United States by Mr. Vasilios G. Valaoras in an article published in 1950. [19] Starting with the census population of the United States in 1900, he calculated what would have happened to that population on the basis of the three assumptions given below:

(1) The trend of mortality and fertility is taken to be the same as it actually was up to 1945 and is then extended at the 1945 level up to 1960 (projection B). The actual population of the United States is the same as this assumed population except for the effect of migration from 1900 to 1945.

(2) Mortality is taken to remain constant at the 1900-1914 level and fertility to decline as in assumption (1) above (projection C).

(3) Fertility is taken to remain constant at the 1900-1914 level and mortality to decline as in assumption (1) above (projection D).

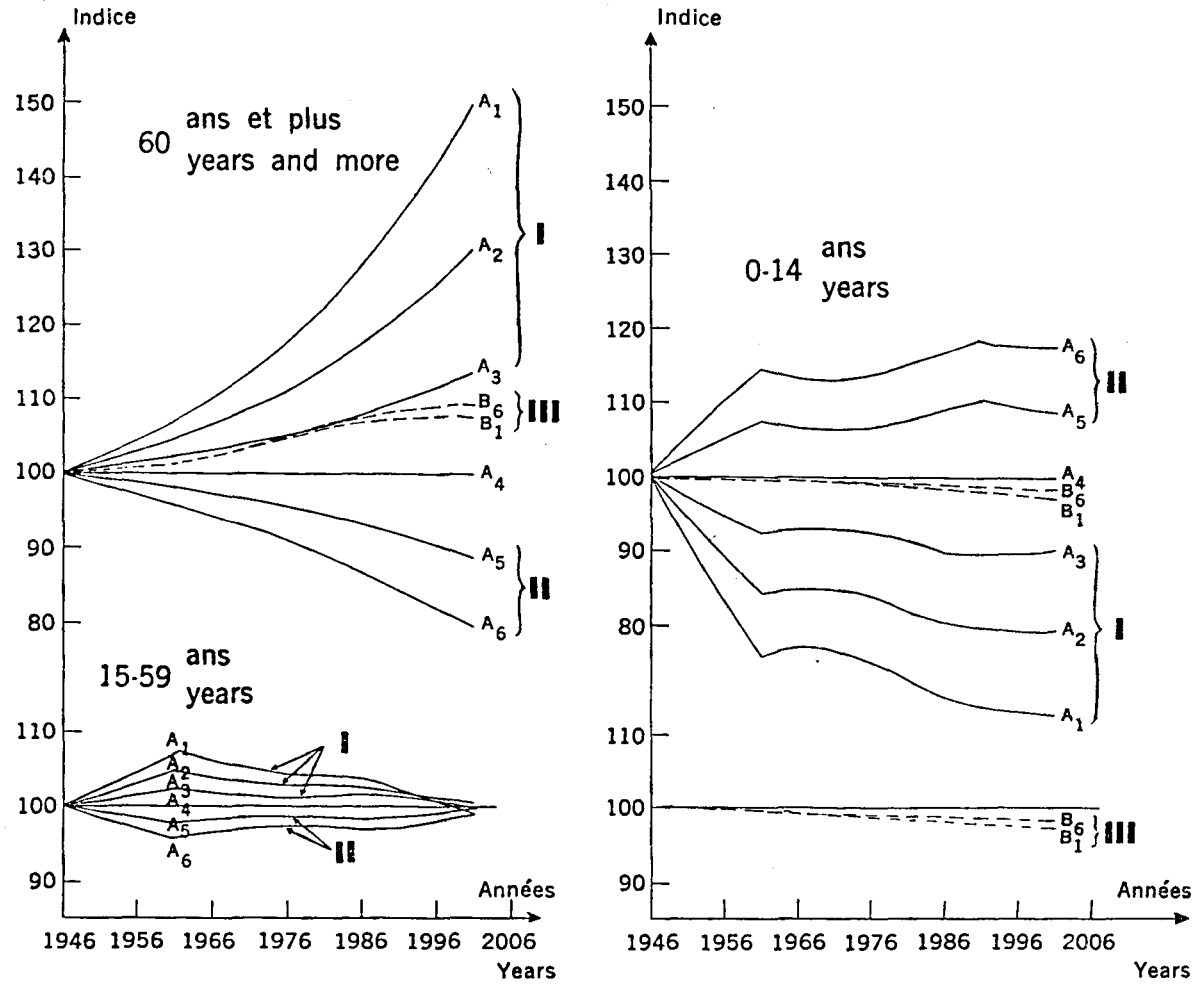
It will be noted that in projections B and C, fertility declines until the end of the period under study (1960). Consequently, by that date, the populations projected are far from having attained stability. Only in projection D can it be expected that the population will have approached stability by the end of the period for which the calculation was made.

Projections B and C differ only in the assumptions regarding mortality, which is constant in C and declining in B. A comparison of these two projections therefore makes it possible to assess the effects of a decline in mortality. Projections B and D differ only in the assumptions regarding fertility, which is declining in B but remains constant in D. A comparison of the results of these two projections therefore makes it possible to assess the effects of a decline in fertility.

The decline in mortality in the projections corresponds to the rise in the expectation of life at birth from fifty to seventy years over a period of approximately forty-five years. The decline in fertility corresponds to the drop in the gross reproduction rate from 1.75 to 1.00 over the same period. We have here changes comparable to those which we used for the stable populations, but there is the disadvantage that stability is not attained by the end of the period under study.

[19] Vasilios G. Valaoras, " Patterns of Aging of Human Populations ", a study published in *The Social and Biological Challenge of Our Aging Population*, New York, Columbia University Press, 1950.

GRAPH 9. — EFFECT OF CHANGES IN FERTILITY AND MORTALITY ON THE AGE STRUCTURE OF THE POPULATION OF FRANCE



I. Projections $A_1A_2A_3$, taking projection A_4 as a base figure of 100 (effect of the decline in mortality).
II. Projections A_5A_6, taking projection A_4 as a base figure of 100 (effect of the rise in fertility).
III. Projection B_6 and B_1, taking projections A_6 and A_1 respectively as base figures of 100 (effect of the decline in mortality).
(For sources, see footnote 19 on preceding page).

Table 25 shows the situation at the end of the period for which the projections were calculated. As might have been expected, only projection D yields a result that approaches stability. Graph 10 clarifies the data in the table by making it possible to follow the trend from the base point. The conclusions are the same as before, namely:

(*a*) Declining mortality has very little effect.

(*b*) Declining fertility causes aging at the apex and base of the pyramid and a rise in the proportion of adults.

4. *Summary of results*

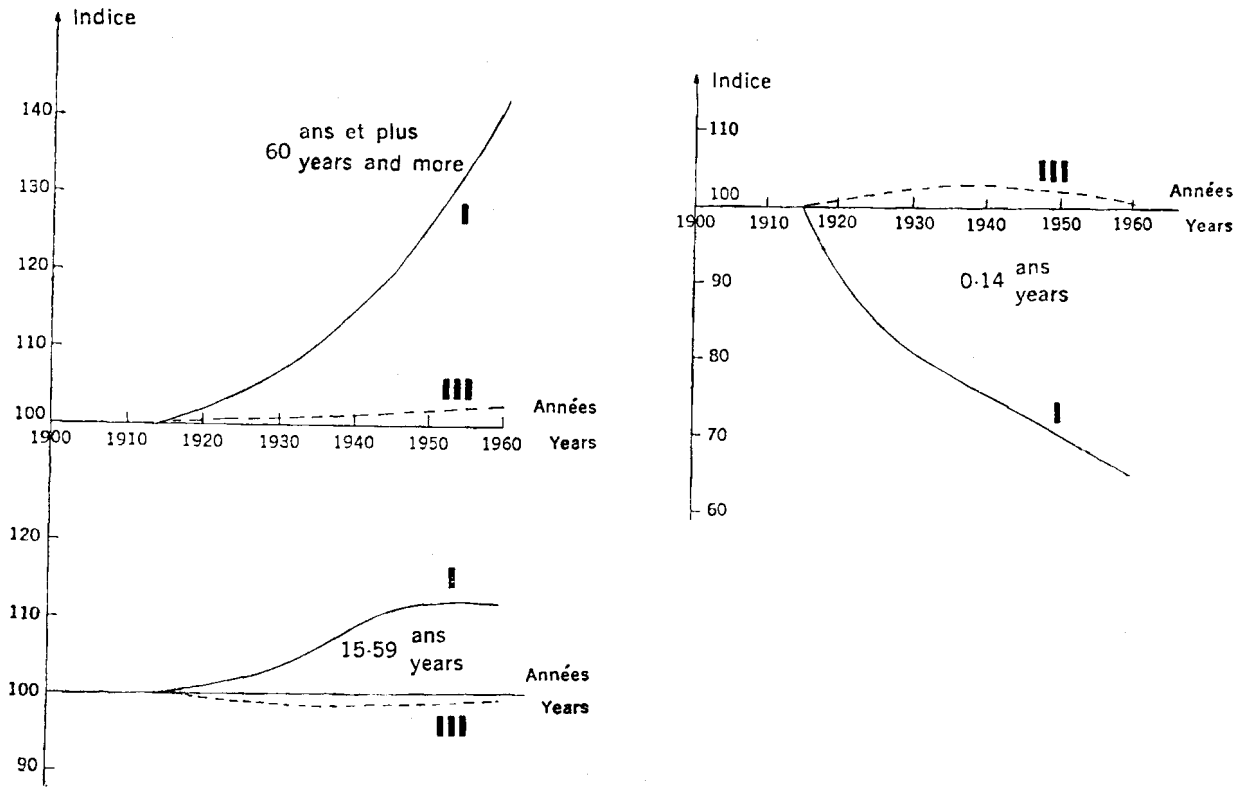
The two methods—the method of stable populations and the method of population projections—are thus seen to lead to the same conclusions, which are summarized in table 26.

The decline in mortality as it has occurred in the developped countries—and to a varying extent in the underdeveloped countries as well—has been a virtually negligible factor in the phenomenon of the increase in the proportion of old people. On the other, by leading to a decrease the proportion of adults, it has tended to make the age structure economically less favourable.

The decline in fertility has consequently been the primary factor in the aging of populations in the developed countries, but at the same time, by increasing the proportion of adults, it has tended to make the age structure economically more favourable.

In the economically developed countries, mortality and fertility have both declined at the same time. Consequently, certain trends have worked to offset each other. This has been particularly true as regards the proportion of adults, for the decline in mortality has tended to reduce it and the decline in fertility to raise it. Where, moreover,

GRAPH 10. — EFFECT OF CHANGES IN FERTILITY AND MORTALITY ON THE AGE STRUCTURE OF THE POPULATION OF THE UNITED STATES



I. Projection B, taking projection D as a base figure of 100 (effect of the decline in fertility).
III. Projection B, taking projection C as a base figure of 100 (effect of the decline in mortality).
(For sources, see footnote to table 25).

both trends have occurred, the proportion of adults has increased slightly. That has also been partly true as regards the proportion of young people, which did not decrease as much as would be expected with a decline in fertility. As regards old people, there was no compensating factor, so that the decline in fertility exerted its full effect. [20]

[20] The foregoing analysis fully confirms the results obtained in a number of recent studies on the influence of changes in fertility and mortality on the age structure of populations. See in particular:

The Determinants and Consequences of Population Trends (especially chapter VII). United Nations Document ST/SOA/Ser.A/17. New York, 1953.

F. Lorimer. "Dynamics of age structure in a population with initially high fertility and mortality". *Population Bulletin of the United Nations* (pp. 31-41), ST/SOA/Ser.N/1. New York, December 1951.

"The cause of the ageing of populations: declining mortality or declining fertility". *Population Bulletin of the United Nations* (pp. 30-38), ST/SOA/Ser.N/4. New York, December 1954.

A. Sauvy. *Le vieillissement des populations et l'allongement de la vie. Population*, No. 4. 1954, pp. 675, 682.

Ansley J. Coale. "The effects of changes in mortality and fertility on age composition." *The Milbank Memorial Fund Quarterly*, Vol. XXXIV. January 1956, pp. 79-114.

D. CRITICISM OF RESULTS

1. *The illusion of stationary populations*

One of the foregoing results will undoubtedly have caused surprise. The reduction of mortality, to which aging at the apex of the population pyramid has so often been attributed, in fact had virtually no effect. It actually resulted in substantial rejuvenation at the base. The reduction also led to a reduction in the proportion of adults, an undesirable result from the point of view of economic production, although the opposite view is frequently maintained. These divergencies require explanation.

Writers who attribute structural aging to the reduction of mortality invariably use stationary populations to prove their assertion. A stationary population is a particular case of a stable population: it is a stable population in which the rate of variation is zero. In other words in a stationary population fertility balances mortality. Consequently, in two stationary populations in which mortality is different, fertility also differs. In stationary populations mortality and fertility are not therefore independent phenomena but are in very a rigid relation-

TABLE 25. — EFFECTS OF CHANGES IN FERTILITY AND MORTALITY ON THE AGE COMPOSITION OF THE POPULATION OF THE UNITED STATES, AS MEASURED BY THE METHODS USED FOR THE PROJECTIONS AND THE GENERAL PATTERN OF STABLE POPULATIONS [a]

Characteristics of the population	Symbols for the projections			Increase (+) or decrease (—) caused by the factors indicated	
	B	C	D	Decline in mortality (B — C)	Decline in fertility (B — D)
Percentage of the population:					
Aged 0-14 years:					
Projections of the year 1960.	20.8	20.6	31.8	+ 0.2	— 11.0
Stable populations . . .	19.5	17.8	33.1	+ 1.7	— 13.6
Aged 15-59 years:					
Projections of the year 1960.	63.9	64.5	57.7	— 0.6	+ 6.2
Stable populations . . .	58.6	60.7	56.2	— 2.1	+ 2.4
Aged 60 years and over:					
Projections of the year 1960.	15.3	14.9	10.5	+ 0.4	+ 4.8
Stable populations . . .	21.9	21.5	10.7	+ 0.4	+ 11.2
Gross reproduction rate:					
At the beginning	1.75	1.75	1.75		
At the end.	1.00	1.00	1.75		
Expectation of life at birth (years):					
At the beginning	50	50	50		
At the end	70	50	70		

[a] Source of projections : Vasilios G. Valaoras, "Patterns of Aging of Human Populations" in *The Social and Biological Challenge of our Aging Population*, New York, Columbia University Press, 1950. The figures used here differ from those in the study published by Mr. Valaoras. An error crept into his calculations. It does not alter the meaning of the conclusions of the study, but it does somewhat change the magnitude of the results. The error consists in the fact that for persons over sixty years of age the mortality figures for men were used for women and *vice versa*. In addition to this, the series of mortality rates was reversed in time, so that the rates for the beginning of the period were used at the end and *vice versa*.

ship: they must be such that the birth rate is always equal to the death rate. [21] In comparing stationary populations we follow the curve separating increasing and decreasing stable populations in graphs 3 and 4; it is then clear that fertility and mortality vary together. It cannot therefore be said that the structural variations observed are due only to variations in mortality. It might equally well be said that they are due only to variations in fertility. All that can be said before taking the analysis further is that the structural variations observed are due to variations in *both* mortality and fertility. The analysis given earlier in fact shows that the direct influence of variations in mortality was negligible. In more precise terms, the decline in mortality substantially affected age structure only to the extent that it resulted in a decline in fertility. Any argument based on comparisons of stationary populations is thus vitiated by a fundamental error. It presupposes a rigid relationship between mortality and fertility which is in fact non-existent and it is this presumed relationship which produces the structural variations observed.

The same error in reasoning is expressed in many ways. The following example may be considered typical. We take 1,000 new-born children and estimate the cost of rearing those who survive to maturity or the age at which they begin to work. Arbitrarily assuming that this age is, for example, fifteen years, the cost per new-born child is approximately proportional to the average number of years between 0 and 15 years lived by a new-born child, and that number of years can be taken as a measure of the cost. The average number of years that a new-born child will work and the average number of years he will spend in retirement are then calculated. Assuming that the retirement age is sixty, we calculate the average

[21] It has, of course, been seen earlier that mortality and fertility can be regarded as independent phenomena only within certain limits. However, their dependence is not such as to require that they should invariably be in balance.

TABLE 26. — EFFECTS OF DECLINING MORTALITY AND FERTILITY ON THE AGE STRUCTURE OF POPULATIONS: SUMMARY OF THE RESULTS OF CALCULATIONS MADE BY THE STABLE POPULATIONS AND THE PROJECTION METHODS

Changes in mortality and fertility	*Effects on the percentage of the population in the broad age-groups*		
	0-14 years	*15-59 years*	*60 years and over*
Decline in mortality:			
As it has occurred in developed and under-developed countries . . .	Increase	Decrease	Very slight change
As it may be expected to occur in future in developed countries	Little change but tendency to decrease	More rapid decrease	Increase
Decline in fertility:			
As it has occurred in developed countries and may occur in future in under-developed countries . .	Decrease	Increase	Increase
As it may occur in future in developed countries [a].	Continued decrease	Little change but tendency to decrease	Continued increase

[a] It should be borne in mind that if this assumption became fact, the result would be a decreasing population.

number of years a new-born child will live between fifteen and sixty, and after sixty. The sum of these three averages is equal to the total expectation of life at birth. With expectations of life at birth of 20 years and 70 years, in accordance with the model tables, the results are as shown in table 27.

TABLE 27. — AVERAGE NUMBER OF YEARS OF LIFE IN BROAD AGE GROUPS FOR A NEW-BORN CHILD ACCORDING TO TWO MODEL LIFE TABLES

Age groups (in years)	*First life table*	*Second life table*
All ages	20.0	70.0
0-14	7.6	14.4
15-59	11.6	40.7
60 and over	0.8	14.9

In some cases 15 years rather than birth is taken as a starting point and an analysis is made of what 1 000 adults fifteen years of age represent. The first step is to calculate the average cost of an adult. If there were no mortality, the cost would obviously be fifteen years, but as children die in infancy more than 1 000 births are required to give 1 000 adults fifteen years of age, the years spent in feeding, clothing and housing children who die before fifteen years of age increase the average cost of an adult. The average number of years that an adult will spend at work and the average number of years that he will spend in retirement are also calculated. These figures can easily be obtained by dividing those of the preceding table by the probability of survival to the age of fifteen.

TABLE 28. — AVERAGE NUMBER OF YEARS OF LIFE IN BROAD AGE GROUPS FOR AN ADULT OF 15 YEARS ACCORDING TO TWO MODEL LIFE TABLES

Age groups (in years)	*First life table (expectation of life at birth, 20 years: probability of survival to age 15, 0.420)*	*Second life table (expectation of life at birth, 70 years: probability of survival to age 15 0.953)*
0-14	18.2	15.1
15-19	27.5	42.7
60 and over	1.9	15.6

These figures are subject to a variety of interpretations, all of which can be reduced to more or less the following type.

Let us imagine a country with high mortality characterized by an expectation of life at birth of twenty years and let us consider the following four ministers of government of the country:

(*a*) The Minister of Youth Training, i.e., the minister who administers, maintains and develops all the services designed to meet the needs of young people;

(*b*) The Minister of Social Security, who administers, maintains and develops all the services to meet the needs of aged persons;

(*c*) The Minister of Economic Affairs: The latter has a twofold task. He must make the investments necessary to provide for the population increase. The Minister of Youth Training applies to him when he needs schools; the Minister of Social Security applies to him when it is necessary to build an old people's home. But the

Minister of Economic Affairs is also responsible for providing employment for all. He distributes workers among the various sectors of the economy, and in particular supplies his two colleagues with the workers they need to administer, maintain and renew the services for which they are responsible.

(*d*) The Minister of Public Health, who is responsible for the health of the community and makes every effort to reduce mortality. Let us imagine that he suggests to his three colleagues health measures capable of increasing life expectation from twenty to seventy years and that he asks their opinion.

The Minister of Youth Training sees from table 28 that at present with a life expectation of twenty years, each fifteen-year old youth he passes on to his colleague, the Minister of Economic Affairs, costs him an average of 18.2 years. With a life expectation of seventy years, the cost will be only 15.1 years. He thus saves 3.1 years on each worker and naturally welcomes the proposals. The Minister of Public Health's measures improve the "output" of his organization and he believes he will be able to use the 3.1 years he saves on each individual to improve the population's level of living.

The Minister of Economic Affairs sees from the table that with a life expectation of twenty years each young worker works an average of 27.5 years, whereas with a life expectation of seventy years, each works 42.7 years. Consequently, the Minister of Public Health's proposed measures will give him 15.2 additional years of work per worker. Like his colleague, the Minister of Youth Training, he welcomes the measures.

For the Minister of Social Security the picture is quite different. With a life expectation of twenty years, he knows that every aged worker lives an average of two years in retirement, whereas with a life expectation of seventy years, he will be retired nearly sixteen years. Thus for every individual his colleague, the Minister of Economic Affairs, passes on to him, he will have an additional 14 years of retirement. He is somewhat apprehensive of the consequences of the Minister of Public Health's proposed measures.

Let us suppose that the Minister of Public Health applies the proposed measures. Mortality is reduced and the expectation of life rises from twenty to seventy years. A few years later the four Ministers again meet to discuss the matter.

The Minister of Youth Training says that with an expectation of life at birth of twenty years, he needed 2,380 newborn children to obtain 1,000 young workers fifteen years of age. With a life expectation of seventy years 1,049 would now be enough. Everything would have gone according to plan if he had been able to reduce the number of newborn from 2,380 to 1,049, but as it has been impossible for him to change the reproductive behaviour of the population, he has been unable to bring about the reduction, and where, with mortality at the old level, he had 1,000 young workers fifteen years of age, he now has about 2,300. Because of this influx of young people, he has had to apply to his colleague, the Minister of Economic Affairs, for new schools, etc.; in short, he has had to expand his services considerably. He has also needed more workers to administer, maintain and renew the expanded services. The savings he had expected to make as a result of the improvement in what he had called the "output" of his organization have been completely used up, and he has even had to ask the Minister of Economic Affairs for more workers.

The Minister of Social Security, as he expected, has had to ask the Minister of Economic Affairs for new buildings. He also has been obliged to expand his services and increase the number of workers he employs.

The Minister of Economic Affairs reports a substantial increase in his investment activity. First he has had to deal with the requests for new buildings submitted by the Minister of Youth Training and the Minister of Social Security. He has also had to build many more new factories than in the past to provide work for all the young people passed on to him by the Minister of Youth Training. But he has also had to make changes in the distribution of workers among the various sectors of economic activity. In that respect, things have not been as he had expected. In view of the explanations he had been given by the Minister of Social Security, he had expected that he would have to supply relatively more workers to look after aged persons and fewer to look after young persons. In fact the position was reversed. The services of the Minister of Youth Training and the Minister of Social Security increased considerably, but as the number of workers also increased, the Minister of Economic Affairs was able to supply the additional workers without difficulty. Out of every hundred new workers, he directs approximately the same proportion as before to employment concerned with old people, and a larger proportion than before to employment concerned with young people. In other words, he reports a rejuvenation of the population at the base.

The initial error of the ministers was to base their reasoning on stationary populations. The facts showed them where their reasoning was at fault.

2. *The dependency of variations in fertility and mortality*

In the earlier parts of this study, it has been assumed that variations in fertility and mortality are independent, the validity of this assumption being left for later discussion. It is proposed to examine it below.

The "sociology" of natality is still very obscure and it is only recently that research has begun to shed some light on this subject. To explain the high fertility in under-developed countries, the following factors are generally put forward:

(*a*) Desire to ensure perpetuation of the family. In some societies childlessness is sometimes considered to be a sign of divine disfavour.

(*b*) The fact that parents need children to look after them when they are old. The role of children sometimes extends beyond old age: they must be there to carry out the rites due to ancestors.

(*c*) Desire to hand on the family name; the parents must have at least one son or daughter, as the case may be.

(*d*) Desire to have a number of children living in the

home; it is not unusual for a society to regard children as a sign of wealth.

(*e*) The need, where the family is an economic unit, to have labour to carry on the family's economic activity.

These desires or needs are, however, expressed by the setting of a minimum target to be attained rather than a maximum not to be exceeded. Parents want at least so many boys or girls, but if the desired number is exceeded, their satisfaction is increased. It is clear that the fulfilment of these desires or satisfaction of these needs entails high fertility when mortality is high. The desired goal can be reached more easily when mortality is reduced. It follows that if fertility does not decline, the desired goal will usually be exceeded, but as this is in itself desired, there is no justification for concluding that a decline in fertility will necessarily occur. The most that can be said is that the reduction of mortality will permit a decline in fertility without jeopardizing the fulfilment of the desires and satisfaction of the needs mentioned. But in order to set in motion the decline another factor will probably be necessary, as for example, propaganda to encourage the use of contraceptive devices.

Fertility can decline only if the number of surviving children causes difficulty in the family. The difficulty may be moral. Families with too many children may be disparaged in the society in question. The difficulty may also be economic: the family may find it hard to provide for the children if there are too many of them. The difficulty may also be social: it may be felt that too many children disrupt the family atmosphere.

Thus, to the extent that the reduction of mortality increases the number of children per family, it may provoke a decline in fertility. This is in fact the form in which the argument is usually presented. The decline in fertility is attributed to the increase in the economic burden of parenthood.

It may be useful to consider in some detail the magnitude of this increase in the cost of parenthood. With a gross reproduction rate of 2.0 the composition by broad age groups of stable populations with a 30- and 60-year expectation of life is as follows :

Expectation of life at birth (in years)	*Percentages of stable population in broad age groups*		
	0-14	*15-59*	*60 and over*
30	31.4	60.9	7.7
60	35.6	55.8	8.6

In the first population group there are 516 children per 1,000 adults, and in the second 638. The reduction of mortality in the example selected increases the burden by 23.6 per cent.

This is, however, a somewhat over-simplified presentation of the problem, in the first place because of the method used. We have chosen the gross reproduction rate as a measure of fertility and have assumed that in a population in which the gross reproduction rate was invariable, fertility would be invariable. This is not, however, true when mortality declines. When mortality declines fewer and fewer unions are dissolved by the death of one of the spouses. In other words, other things being equal, the proportion of married women increases and these married women may have fewer and fewer children without any decrease in the average number of children per married or unmarried woman. To put the matter differently, if the reproductive behaviour of couples remains invariable, the gross reproduction rate increases when mortality decreases. It is, however, essential to determine the order of magnitude of this increase for a given variation in mortality.

The following table shows the approximate order of magnitude of legitimate fertility rates observed in populations where the gross reproduction rate is about 2.0.

Age groups (in years)	*Annual legitimate fertility rate*
20-24	0.300
25-29	0.240
30-34	0.180
35-39	0.120
40-44	0.060

Let us imagine a population model in which all the women marry at twenty and the men at twenty-five. Let us assume that there are no single persons among the members of the less numerous sex, and that marriages will only be dissolved by death. [22] In the various stable populations used hitherto it is easy to calculate the proportion of widows and thus of married women at each age. Let us apply the preceding fertility rates to these married women and assume illegitimate fertility to be zero. We then obtain the fertility rates per married or unmarried woman. The gross reproduction rate corresponding to the above legitimate fertility rates can be obtained from the sum of these rates. Table 29 gives details of the calculation for the six stable populations already used.

It can be seen from table 29 that if life expectation at birth is increased from 30 to 60 years the gross reproduction rate rises from 1.99 to 2.15, an increase of 8.2 per cent. Let us reconsider the stable population calculated with a life expectation at birth of 30 years and a gross reproduction rate of 2.0. In order to compare it with a stable population calculated with a life expectation of 60 years and the same fertility as the preceding population, the calculation must be made using a gross reproduction rate of 2.0 increased by 8.2 per cent.

Gross reproduction rate	*Expectation of life at birth (in years)*	*Percentage of stable population in broad age groups*		
		0-14 years	*15-59 years*	*60 years and over*
2.00. . . .	30	31.4	60.9	7.7
2.16. . . .	60	37.5	54.8	7.7

In the first population there are 516 children per 1,000 adults and in the second 684, an increase of 31.8 per cent

[22] I.e., we assume that there are no divorces.

in child dependency. When the gross reproduction rate was used as a measure of fertility, it was concluded that the raising of the expectation of life from 30 to 60 years involved a 23.6 per cent increase in child dependency. The increase shown by the new calculation is substantially higher.

Moreover, it has been assumed that children between 0 and 14 years of age are all dependent and all represent the same burden. In fact, children's needs increase with age; on the other hand, after a certain age children work and thus bring in a return. The burden represented by children is therefore equivalent to the difference between what they produce and what they consume. To carry the analysis a stage further, a number of models of family building have been imagined; although relatively simple, the models are close enough to the facts for the conclusions to be valid.

(a) *First model*

We take 1,000 women who marry at the age of fifteen. We assume that they have their first child at sixteen and a live-born child every two and a half years thereafter. We also assume that these conditions do not change for the 1,000 women throughout their reproductive period, i. e., that the couples so formed are not subject to dissolution for any reason. On the other hand, we assume that the children of these couples may die. We assume that the children's needs increase with age from 0 to 15 years and then remain constant. The following scale of needs has been adopted:

Age in years	*Needs of a child expressed using an adult's needs as unit*
0.0	0.4
2.5	0.5
5.0	0.6
7.5	0.7
10.0	0.8
12.5	0.9
15.0	1.0

Finally, we assume that one worker normally produces two "need units" a year, that it takes five years for him to attain this output from the time he begins to work, and that during his first year at work he produces one need unit. Thus, if a is the age of entry into the labour-force, production increases as follows:

Age (in years)	*Production expressed in adult need units*
a	1.0
$a + 2.5$	1.5
$a + 5.0$	2.0

Assuming that all children begin to work at the age of ten, we can calculate, using an adult's need as unit, the burden represented by the surviving children in families formed in the manner indicated. The burden reaches a maximum shortly before the mother is twenty-five years of age. The following table gives the values for the maximum dependency burden in accordance with the

TABLE 29. — CALCULATION OF GROSS REPRODUCTION RATES CORRESPONDING TO GIVEN LEGITIMATE FERTILITY RATES FOR SIX STABLE POPULATIONS AT DIFFERENT LEVELS OF MORTALITY

Age groups (in years)	*Annual fertility rate of married women (per 1,000)*	*Expectation of life 20 years*		*Expectation of life 30 years*		*Expectation of life 40 years*		*Expectation of life 50 years*		*Expectation of life 60 years*		*Expectation of life 70 years*	
		Proportion of married women (per 1,000) [a]	*Fertility rates of married and unmarried women (per 1,000)* [b]	*Proportion of married women (per 1,000)* [a]	*Fertility rates of married and unmarried women (per 1,000)* [b]	*Proportion of married women (per 1,000)* [a]	*Fertility rates of married and unmarried women (per 1,000)* [b]	*Proportion of married women (per 1,000)* [a]	*Fertility rates of married and unmarried women (per 1,000)* [b]	*Proportion of married women (per 1,000)* [a]	*Fertility rates of married and unmarried women (per 1,000)* [b]	*Proportion of married women (per 1,000)* [a]	*Fertility rates of married and unmarried women (per 1,000)* [b]
20-24	300	1 000	300	1 000	300	1 000	300	1 000	300	1 000	300	1 000	300
25-29	240	900	216	929	223	951	228	968	232	982	236	992	238
30-34	180	792	143	854	154	901	162	934	168	963	173	983	177
35-39	120	676	81	774	93	847	102	900	108	941	113	972	117
40-44	60	551	33	685	41	785	47	859	52	914	55	956	57
Gross reproduction rate [c]			1 894		1 987		2 056		2 107		2 149		2 178

[a] Proportion calculated on the assumption that all women marry at the age of twenty and men at twenty-five, that there are no single persons among the members of the less numerous sex, that marriages are dissolved only by death in accordance with the mortality rates for each sex in the model table corresponding to the indicated level of life expectation at birth, and that widows do not remarry.

[b] Annual rates calculated by multiplying the annual fertility rate of married women by the proportion of married women.

[c] Rates calculated by multiplying the total of the annual rates of quinquennial age groups by five and dividing the sum by an assumed ratio of female births to male births (49 female births per 51 male births).

model life tables already used. (The tables are characterized here by expectation of life at birth).

Expectation of life at birth (in years)	*Maximum child dependency burden*
30	1.62
40	1.87
50	2.08
60	2.30
70	2.50

The significance of these figures should be examined in greater detail. If, for example, mortality is such that life expectation at birth is forty years, the situation when the child dependency burden is at the maximum will be as if the family had on the average, to support 1.87 adults in addition to the parents. A reduction of mortality raising life expectation from thirty to sixty years will result in a 42.4 per cent increase in the maximum dependency burden.

The type of family envisaged in the first model may be regarded as characteristic of under-developed countries with high fertility. The second model is applicable to developed countries.

(b) *Second model*

Experience shows that the decline in fertility is produced principally by a reduction in the number of children born rather than by the spacing of births. In the second model we shall therefore retain the interval of two and a half years between births but limit the total number of children first to four and then to three. It will also be assumed that the age at marriage is twenty. [23] It is also assumed that the age of entry into the labour force is fifteen when the number of children is limited to four, and seventeen and a half when the number of children is three. Using the same mortality models, we thus obtain the following maximum dependency burdens, which occur shortly before the mother reaches the age of thirty-six.

Expectation of life at birth (in years)	*Maximum child dependency burden*	
	Family size 4 children. Age of entry into labour force: 15 years	*Family size: 3 children Age of entry into labour force: 17.5 years*
60	2.97	2.35
70	3.25	2.58

The figures again show that the reduction of mortality increases the family dependency burden. However, it will be noted that the dependency burdens in the present model are uniformly higher than those in the preceding model, although families willingly accept them. In other words, a family of the developed country type which limits the number of children to three and sends them to work at seventeen and a half years of age, has a maximum family dependency burden 60 per cent higher than the maximum of a family of the under-developed country type which does not limit the number of children and sends them to work at the age of ten. The developed country family undertakes to support the equivalent of almost one adult more than the under-developed country family. The burden borne by the developed country family is still 12 per cent higher than that of an under-developed country family in which mortality is such as to make the expectation of life at birth sixty years.

We now have a measure of the order of magnitude of the increase in the child dependency burden resulting from a reduction in mortality which may be considered typical of the transition which occurs when an under-developed country becomes a developed country. The question is whether the increase in the dependency burden will bring about an appreciable decline in fertility. To answer this question, it must be remembered that the impact of the burden of dependent children is not the same in economies in which vital needs are satisfied as in those in which they are not. It is clear that a family can accept an additional adult to support only if vital needs can be satisfied. If in model 1 food resources are barely sufficient to accept the burden corresponding to a life expectation of thirty years, the effects of the reduction of mortality must, if food resources cannot be increased, by technical progress or otherwise, be offset by the effects of a decline in fertility or mortality will return to its former high level.

In fact, possibilities of expanding the production of consumer goods exist everywhere to varying degrees, so that the necessity for a decline in fertility can be avoided, at least for a while. It may be asked how long the decline in fertility can be postponed. To answer this question, it is useful to consider how a reduction of mortality affects the total population. In studying how the transition from one stable population to another took place, we envisaged a population in which fertility would remain constant at a very high level and in which the expectation of life would rise in forty-five years from 40 to 60 years, a situation that might well arise in the under-developed countries. The calculations showed that in fifty years the initial population was multiplied 4.3 times, and in 100 years, 23.7 times. Let us apply these results to the populations of Brazil and India.

In 1955 Brazil had 58 million inhabitants. If the population trends are as assumed above, the population in 2005 would be 232 million, a figure which does not seem unreasonable. In 2055 the total would be 1,400,000,000 which seems hardly possible.

In 1954 India had 377 million inhabitants. If the population trends are as assumed above, the populaton would be 1,400,000,000 in 2005 and 8,900,000,000 in 2055, which is absurd.

The foregoing does not solve the question but clearly shows that there is no single solution to the problem of the dependence of demographic factors.

3. *The effect of migrations*

At the beginning of this chapter it was explained why the effects of migrations on the age structure of populations would not be considered. A theoretical essay on the subject will be found in a recent United Nations

[23] The age at marriage does not change the value of the maximum dependency burden but only the age at which the maximum occurs.

Projection No.	*Mortality*	*Marriage*	*Fertility*	*Migration*
8	Declining	Constant	Constant	Nil
12	Declining	Constant	Constant	100 000 emigrants annually
13	Declining	Constant	Constant	100 000 immigrants annually

publication. [24] The essay deals with international migrations, one of the easiest cases because the age structure in such migrations is, in general, always of the same type save in a few exceptional cases.

The conclusion of the essay is that a continuous migratory stream with no abrupt changes in volume retards the aging of a population very little.

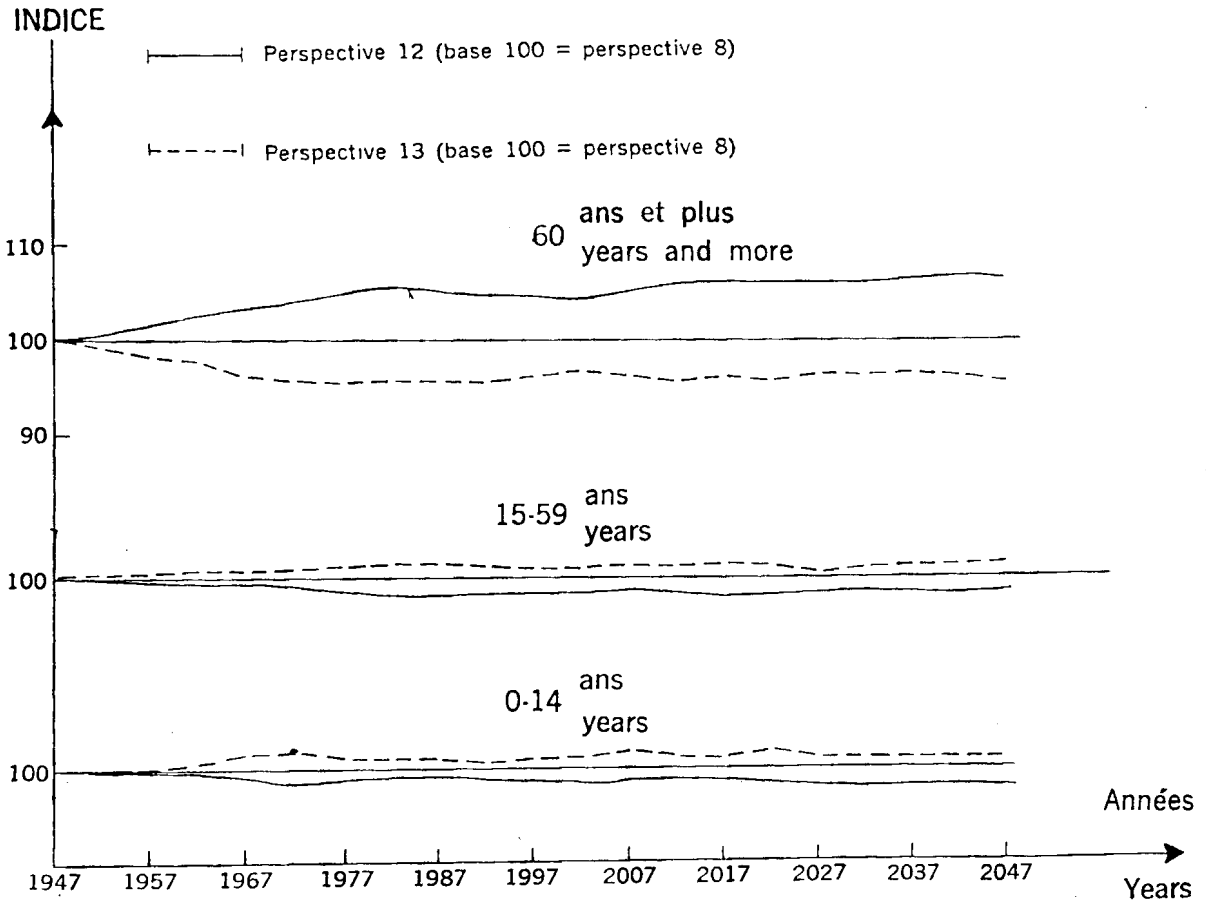
Assumptions concerning international migration are included in some population projections. Projections No. 12 and No. 13 of the series prepared by the British Royal Commission on population assume respectively a net immigration and a net emigration of 100,000 persons a year. The age composition of the immigrants or emigrants is that of emigrants from Great Britain during the period 1921-1932. If we compare these two projections with Projection No. 8 of the same series, we can measure the effect of migration on age composition. The above table shows the assumptions used in calculating the three projections.

Graph 11 shows that the effects of migratory movements on the age structure are slight. This corroborates the conclusion of the theoretical essay referred to above.

When the projections calculated by Mr. V. Valaoras were used, it was pointed out that the real population of the United States differed from projection B only in respect of the effect of migratory movements between 1900 and 1945. If the age structure of projection B is compared with the age structure of the real population, the effect of immigration to the United States during

[24] *The Population of South America*, 1950-1980, pp. 109-139. United Nations publication (Sales No. : 1955.XIII.4). Cf. also " Some quantitative aspects of the aging of western populations ", *Population Bulletin* No. 1, pp. 42-57. United Nations publication (Sales No. : 1952.XIII.2).

GRAPH 11. — EFFECT OF MIGRATIONS ON THE POPULATION OF GREAT BRITAIN (PROJECTIONS NO. 12 AND NO. 13 IN THE SERIES OF PROJECTIONS CALCULATED BY THE BRITISH ROYAL COMMISSION ON POPULATION), (PROJECTION NO. 8 AS BASE = 100).



the first forty-five years of the twentieth century can, therefore, be measured. This comparison can be made using table 30.

Here again the conclusions are the same. Migrations have slightly retarded the demographic aging of the United States population, but their effect has been very slight.

The Organisation for European Economic Co-operation (OEEC) has published [25] projections for the period 1951-1971 for member countries of the organization. In the case of some countries a projection in which migratory movements are nil is given as well as a projection in which migratory movements are taken into account. Comparison of these projections confirms that the effect of international migrations on the age structure of populations is slight.

Internal migratory movements are much more varied, and less information is available on them than on international migrations. In a study to be published shortly [26] an attempt will be made to determine the effects of internal migratory movements on the age structure of the population of various states in the United States.

[25] *Demographic Trends in Western Europe, 1951-1971.* Report published by the Organisation for European Economic Co-operation, Paris.

[26] This study will be part of the series of monographs on the 1950 census of the United States population published by the Social Science Research Council in co-operation with the United States Bureau of the Census.

TABLE 30. — STRUCTURE OF THE REAL POPULATION OF THE UNITED STATES BY BROAD AGE GROUPS AND PROJECTIONS CALCULATED ON THE ASSUMPTION THAT THERE WERE NO MIGRATORY MOVEMENTS, BETWEEN 1900 AND 1945

Age groups and years	*Percentage of the population*		*Increases (+) and decreases (—) produced by migratory movements (B — A)*
	Projections A (real population)	*Projections B* [a]	
0-14 years:			
1900.	34.5	34.5	0.0
1915.	32.0	30.2	— 1.8
1930.	29.4	26.5	— 2.9
1945.	25.2	23.5	— 1.7
15-59 years:			
1900.	58.8	58.8	0.0
1915.	60.8	62.7	+ 1.9
1930.	62.1	64.1	+ 2.0
1945.	63.8	64.5	+ 0.7
60 years and over:			
1900.	6.7	6.7	0.0
1915.	7.2	7.1	— 0.1
1930.	8.5	9.3	+ 0.8
1945.	11.0	12.0	+ 1.0

[a] Projections calculated on the basis of mortality and fertility actually observed, assuming migratory movements to be nil.

Source : Vasilios G. Valaoras, *op. cit.*

Chapter III

ECONOMIC AND SOCIAL IMPLICATIONS

The causes of variations in the age structure of populations were considered in the preceding chapter. However, as has been stated more than once, a variation in age structure would pose no problem if the behaviour or attitude of the members of the population did not vary with age. A problem arises in connexion with the relationship of the age structure curve and the curve of age-specific behaviour with reference to a particular phenomenon. The curves of the behaviour of individuals in relation to the production, distribution and consumption of wealth combined with the various age structure curves provide a means of studying the economic implications of the aging of populations. [1]

As was explained in the introduction, of these three behaviour curves one, behaviour with reference to production, is fundamental, for the problem of consumption and distribution must in the last resort be solved by those who produce the wealth. It is therefore logical to begin by considering behaviour with reference to economic activity.

A. Economic activity

The relationships between population and production raise complex problems which have been the subject of many detailed studies. [2] In a study of aging these relationships can most usefully be considered as they affect the economically active population. As labour is a fundamental factor in production, the direct incidence of aging on the productive forces of a population can readily be appreciated. The relative size and age composition of the labour force are basically determined by the age structure of the population and by individual behaviour in relation to employment, i. e., age specific activity. Any modification of either of these components affects the value under consideration. Here again the two aspects of aging referred to in the introduction to this study, structural aging and individual aging are involved.

Structural aging was examined in the first part of the study. The consequences of structural aging can easily be demonstrated if we assume that the individual characteristic remains constant, i. e., if we assign a fixed activity value to each age. There will then be a definite relationship between the size of the active population and the total population corresponding to a given age structure.

The abstract character of this method may, however, limit the value of the results obtained. While the analysis must, if it is to be clear, be made on the basis of a constant function, it must, if it is to be realistic, be supplemented by analysis on the basis of a variable function. Only in exceptional cases can the same function be applied to fundamentally different structures. As a general rule, old structures are characteristic of the economically developed countries whereas young populations are a typical feature of economically backward countries. The functions are different for different types of economy and for different periods and areas. In most cases it is therefore misleading to apply the same functions to widely differing populations. The calculation can be significant only for a group of countries with a comparable level of living but at different stages of the aging process. The analysis must therefore be supplemented by a study of the consequences of changes in individual behaviour. Different functions will be applied to identical structures in order to isolate the effects of these changes. Finally both the function and the structure will be varied in order to give a complete picture of the real "demo-economic" evolution.

It is proposed to begin with a general discussion of the individual characteristic under consideration, i. e., age-specific activity, in various countries and at various periods. We shall then consider the consequences of aging, structural and individual, at the population level, with particular reference to the volume of employment and demographic investments. Stable populations are best suited to an over-all analysis of the phenomenon and will be studied first. Next, actual populations will be studied using demographic projections; the second method will make it possible to take the time factor into account in the interpretation of the results. [3]

1. *Age-specific activity rates by countries and periods*

(a) *The measurement of the active population*

A whole series of factors related to economic and social development, such as compulsory education, industrialization, rural migrations, retirement schemes,

[1] It should be remembered that when the term "aging" is used without further qualification it applies to aging at the base or at the apex of the pyramid.

[2] See in particular part three of the study *The Determinants and Consequences of Population Trends*, United Nations publication, Sales No. 1953.XIII.3.

[3] A number of questions more specifically related to the employment of older workers such as unemployment, the attitude of employers and trade unions, vocational guidance, old age and fitness for work are dealt with in the social chapter in this study and in numerous studies of aging. For a general treatment of these questions, see in particular: International Labour Organisation, *The Age of Retirement.* European Regional Conference 1955, report IV, annex 147, 13 December 1954.

etc., have led to the establishment of a clearer distinction between the active and inactive periods in man's life and permitted clarification of the hitherto ill-defined concept of economic activity. Furthermore, the need to measure the active population of a country has necessitated a more exact definition of the employment status of the individual.

The active population can be considered from the following three points of view. [4]

(1) The population of working age: broadly speaking this corresponds to the adult population.

(2) The working population: this includes men and women who are normally employed, but who may be temporarily unemployed.

(3) The employed population in the broadest sense of the term; this is the population actually engaged in productive employment at a given time. With the unemployed it forms the working population.

The second definition is that generally used in enumerating the active population in censuses and will be adopted in this chapter.

In each age group a certain number of persons are economically active ; this is measured by the "activity rate", the number of economically active persons expressed as a percentage of the total number of persons in the age group concerned. All the activity rates taken together constitute the activity table. A difficulty arises from the fact that the definition of economically active persons for census purposes varies from country to country. In the case of women, whose activities are frequently divided between paid and unpaid work, the definitions differ so widely from country to country that international comparison is frequently misleading. This study will therefore deal only with male activity. As far as men are concerned, the effect of the differences of definition is negligible for adults although not unimportant as regards the ages of entry into and withdrawal from the labour force. The differences in the activity rates at these ages observed in the various countries must therefore be interpreted in the light of a thorough study of the definitions adopted and the procedures followed in tabulating the data. Nevertheless census statistics of the active male population are sufficiently comparable to give a valid indication of the order of magnitude of the activity rates for groups of countries classified by economic and social characteristics.

(b) *Age-specific activity rates in relation to economic development*

The countries for which 1950 census figures were available were classified in three groups according to the proportion of their economically active males employed in agriculture [5] and this was accepted as giving an approximate classification of the countries in three broad stages of economic development.

(*a*) Under-developed countries (60 per cent or more of males employed in agriculture);

(*b*) Semi-developed countries (35 to 59 per cent of males employed in agriculture);

(*c*) Developed countries (less than 35 per cent of males employed in agriculture).

Male activity rates for the three categories of countries in or about 1950 are given in table 31.

TABLE 31. — MALE ACTIVITY RATES BY AGE GROUPS (PER 100 MALES) OBSERVED IN OR ABOUT 1950 IN THREE GROUPS OF COUNTRIES CLASSIFIED BY LEVEL OF ECONOMIC DEVELOPMENT

Countries	*Age groups (in years)*								
	All ages	*10-14*	*15-19*	*20-24*	*25-34*	*35-44*	*45-54*	*55-64*	*65 and over*
Under-developed	58.5	30.8	81.8	93.1	96.2	97.2	96.2	90.7	78.5
Semi-developed.	57.3	8.6	70.9	91.8	96.1	97.1	96.0	90.0	62.5
Developed.	61.5	4.9	68.9	90.7	96.2	97.2	94.9	83.5	40.6

Table 31 clearly shows the changes which occur with economic and social development. Between twenty and fifty-four years, activity rates are very high and almost identical in the three groups of countries. Under twenty-five and over fifty-four years, on the other hand, the differences increase as the countries' level of economic development rises. In other words as one moves away from the middle age groups the higher the level of living the lower the activity rate. The rates in table 31 are only averages but extreme examples can be given to illustrate this phenomenon still more strikingly, as is shown in Tables 32 and 33.

As was mentioned earlier, there are, of course, differences in the definition of the active population in these various countries but they are not enough to account for the wide divergences in the rates observed.

In a developed country such as Sweden, activity is virtually nil for the whole of the 10-14 age group, rising rapidly to a high level in the following age groups. Entry

[4] Frederic Tabah, "Rapport sur les travaux relatifs aux problèmes de population active", *Études européennes de populations*, pp. 206, *et seq.*

[5] United Nations Secretariat, *Age Structure and Labour Supply*, document E/CONF.13/343 prepared for the World Population Conference, Rome, September 1954. The activity rates for certain age groups in some countries were estimated.

TABLE 32. — ACTIVITY RATES FOR YOUNG MALES (PER 100 MALES) FOR SWEDEN (1950) AND TURKEY (1945)

Country	Age groups	
	10-14	15-19
Sweden (1950)	1.3	74.7
Turkey (1945)	48.7	79.9

TABLE 33. — ACTIVITY RATES FOR MALES IN OLDER AGE GROUPS FOR EGYPT (1947) AND BELGIUM (1947)

Country	Age groups	
	55-64	65 and over
Egypt (1947).	93.9	84.5
Belgium (1947).	78.4	24.7

into the labour force is thus concentrated within a small range of years. In Turkey, on the other hand, the range is wider and entry into the labour force is spread over a greater number of years so that at the population level the separation between the period of activity and the period of inactivity is much less clear-cut. In the latter example, the lack of detailed statistics for the ages under ten makes it impossible to give a true picture of the whole progression. It should also be noted that the fact that the statistics are in quinquennial age groups tends to accentuate the phenomenon.

The same phenomenon, although to a much lesser degree, is apparent in the older age groups in regard to withdrawal from the labour force. Here again the absence of detailed statistics by age makes comparison difficult. The countries for which statistics by quinquennial age groups over sixty-five are available show that withdrawal from the labour force is spread over a wider range of years than entry.

(c) *Activity rates at different periods*

The comparability of activity statistics for various periods is no greater than that of statistics for different countries. Here again, numerous difficulties are created by the diversity of terminology, definitions and methods of enumeration. Moreover, the compilation of statistics of the active population is a relatively recent development and such statistics are difficult to find for periods earlier than the last two or three decades of the nineteenth century. Nevertheless the available statistics are sufficient to show the order of magnitude of the changes which have affected behaviour in relation to employment during this period.

Table 34 gives the age-specific activity rates of the male population for two census years in four developed countries.

The preceding observations based on a comparison of activity behaviour in countries at very different levels of living largely apply here; the variations in time are of the same order as the geographical variations. The shape of the activity curves is generally the same: a rapid increase up to adulthood, a levelling off between 25 and 54 years of age and then a more or less gradual decline. As economic and social development proceeds, it is reflected at the two extremes of the curves by a later entry into the labour force and an earlier withdrawal. [6]

For all the age groups of 65 and over activity has, in general, greatly declined. [7] In the case of the 10-14 age group, the absence of statistics makes it impossible to determine the trend.

It will, however, be noted that in the case of Australia, for which the statistics are available, the activity rate drops by four-fifths between 1911 and 1947; in other words the difference is of the same order of magnitude as the observed difference for the same age group between developed and under-developed countries.

In conclusion, comparisons of different periods as well as of different countries show that the behaviour of populations with reference to the *entry* into and *withdrawal* from the labour force of men correspond to the different broad stages of economic development, but that the behaviour of men between twenty-five and fifty-five years of age remains more or less unchanged.

(d) *The causes of changes in activity rates*

An analysis of the causes of changes in activity rates in the course of time would be outside the scope of this study. Only a few general considerations will therefore be mentioned. [8]

The changes observed in individual behaviour with reference to activity can be attributed to three major causes closely related to economic and social development and more particularly to industrialization, *viz.*, urbanization, changes of occupational structure, and social advancement.

Generally speaking in any given period and country the behaviour of the farmer differs from that of the industrial or office worker. The farmer's young son and father can work on the family farm, whereas the family of the factory worker or bank clerk cannot. Consequently, industrialization which is limited to shift from the agricultural to the industrial sector involves a change in the general activity rates of the whole population.

In every type of economic activity behaviour depends on the individual's position in his employment. The owner of a small concern often continues to manage it until an advanced age. The concentration of business which accompanies economic development and occurs

[6] It should be pointed out that as far as New Zealand is concerned the apparent decline in activity in the adult age groups between 1901 and 1951 is accounted for by changes in the method of reporting or in the definition adopted and is not a real decline; the 1901 rates are in fact abnormally high (approximately 99 per cent).

[7] With the exception of certain countries, such as France, where the decline is relatively small. This is due to the fact that the percentage of persons employed in agriculture is relatively high and that French agricultural workers report that they are actively employed until an advanced age. It has already been stated that it is difficult to assess the activity of persons in the older age groups objectively.

[8] See *The Determinants and Consequences of Population Trends*, op. cit.

TABLE 34. — ACTIVITY RATES BY AGE GROUPS (MALE POPULATION) FOR FOUR DEVELOPED COUNTRIES, ACCORDING TO THE CENSUSES OF 1945-1951 AND 1891-1911

Age groups (in years)	Australia		France [a]		Great Britain		New Zealand	
	1911	1947	1901	1946	1901	1951	1891	1945
10-14 . . .	16.0	3.3	[b]		[b]		5.6	0.4
15-19 . . .	90.0	81.1	83.7	75.5	91.8	83.9	91.1	70.1
20-24 . . .	97.7	93.8	94.6	91.1	97.4	95.3	99.4	94.6
25-29 . . .	98.1	96.8	96.0	95.5	98.3	98.1	99.1	96.8
30-34 . . .	97.9	98.1	96.8	97.0				
35-39 . . .	97.6	98.1	97.0	97.2	97.8	98.7		
40-44 . . .	97.0	97.7	96.5	97.3				
45-49 . . .	96.4	96.7	95.8	96.3	96.1	98.0	97.8	86.4
50-54 . . .	95.1	94.3	93.9	93.0				
55-59 . . .	92.6	91.3	90.0	85.3	89.0	91.6		
60-64 . . .	85.8	79.9	86.0	76.2				
65-69 . . .	72.0	49.6	78.0	66.4				
70-74 . . .			68.0	55.0				
75-79 . . .			55.0	40.0				
80-84 . . .	44.1	22.8	44.0	33.0	60.7	32.0	84.9	30.7
85-89 . . .			22.0	18.0				
90 and over.			7.0	3.0				
65 and over.	55.3	33.9	65.1	54.3	60.7	32.0	84.9	30.7

[a] In France, the last age group for censuses of the active population is seventy and over. The figures for the quinquennial age groups after seventy are estimated.

[b] Figures not available.

in all sectors, agricultural as well as industrial, modifies the curve of over-all behaviour with reference to economic activity.

Social advancement tends to postpone entry into the labour force and to advance the age of retirement, independently of any change of occupational structure that may occur. Social advancement thus also modifies the behaviour curve.

2. *The consequences of aging on activity*

Structural aging and individual aging having been examined separately, we must consider the influence of the two processes on the active population with particular reference to the growth of the active population. Particular consideration will be given to the effects of changes in mortality, fertility and activity rates on the relative size and age structure of the active population; the renewal of the active population, entry and withdrawal from the labour force and rates of variation.

The effects of each of these factors on the stable populations studied above [9] will be considered first, followed by a global calculation based on an actual population.

(a) *Relative size of the active population in stable populations*

The results of the calculations, as regard the percentage of active males, are summarized in table 34*a*. The three factors considered are mortality measured by the mortality rates in the model tables corresponding to various values of expectation of life at birth, fertility measured by the gross reproduction rate, and economic activity measured by the two standard activity tables for developed and under-developed countries. [10]

TABLE 34a. — ECONOMICALLY ACTIVE MALES OF TEN YEARS OF AGE AND OVER AS A PERCENTAGE OF TOTAL MALES OF ALL AGES IN STABLE POPULATIONS CORRESPONDING TO DIFFERENT LEVELS OF LIFE EXPECTATION AT BIRTH, GROSS REPRODUCTION RATE AND MALE ACTIVITY RATES

Level of activity rates and gross reproduction rates		Expectation of life at birth (in years)		
		30	50	70
Under-developed country activity rates				
Reproduction rate . .	4.0	52	49	46
Reproduction rate . .	3.0	58	55	52
Reproduction rate . .	2.0	66	63	61
Reproduction rate . .	1.0	78	76	74
Developed country activity rates				
Reproduction rate . .	4.0	46	43	40
Reproduction rate . .	3.0	52	49	46
Reproduction rate . .	2.0	60	57	54
Reproduction rate . .	1.0	71	67	65

[9] See chapter II : Analysis of causes.

[10] The standard activity tables are those used to illustrate activity behaviour in developed and under-developed countries. See table 31.

The extreme variations of each of these factors taken parately, i. e., assuming the other two to be constant, all for the following comments:

(1) The reduction of mortality leads to a reduction f four to six active males per hundred males of all ages in he total male population according to fertility and the ctivity rate applied. This reduction is explained by the light rejuvenation at the base of the age structure noted bove in cases of declining mortality.

(2) The reduction of fertility has an opposite and much greater effect, producing an increase in the relative umber of active males of 24 to 28 per cent of the male opulation. This is the direct effect of structural aging lue to decreasing fertility.

(3) Transition from the activity table for under-developed countries to the activity table for developed countries educes the number of economically active males by 6 to 9 er cent of the male population. The effect is similar o that produced by reduction of mortality.

This general scheme of variation is purely theoretical, s the three factors under consideration cannot be combined in any random order. No population, for instance, as a life expectation of thirty years and a gross reproduction rate equal to one. As a general rule, populations re grouped around the following co-ordinates:

(1) Developed countries: gross reproduction rate between one and two, life expectation at birth approximately seventy years and developed country activity ates;

(2) Under-developed countries with high mortality: gross reproduction rate between three and four, life xpectation at birth approximately thirty years and under-leveloped country activity rates;

(3) Under-developed countries with medium mortality: the same gross reproduction rates and the same activity rates but a life expectation at birth of fifty years.

The percentage of active males in the total male population for these three broad categories is approximately 60 per cent for the first category, 52 per cent for the second category and 55 per cent for the third category. The developed countries thus have the advantage of a higher percentage of active males.

A more detailed study of the effect of each of these factors shows that if the activity rates in an under-developed country with a high mortality rate changed from the under-developed to the developed country level, the percentage of active males would, other things being equal, be reduced by 6 per cent of the total male population. If the activity rates remained unchanged and mortality was reduced to the developed country level, the reduction would be slightly less and, if the two processes occurred simultaneously, it would be much greater (approximately 12 per cent). If the gross reproduction rate changed from the under-developed to the developed country level, the effect would be the opposite. With no modifications of behaviour, there would be a substantial increase in the percentage of active males given the favourable age structure of low fertility countries. In the long run, however, the difference tends to be reduced as a result of changes in activity rates.

(b) *Age structure of the active population in stable populations*

Table 35 shows the distribution by broad age groups of active males of ten years and over for several stable populations ; the activity rates have been taken from the standard activity tables used previously.

TABLE 35. — DISTRIBUTION BY AGE GROUPS OF THE ACTIVE MALE POPULATION AGED TEN YEARS OR MORE IN STABLE POPULATIONS CORRESPONDING TO DIFFERENT LEVELS OF LIFE EXPECTATION AT BIRTH, GROSS REPRODUCTION RATES AND MALE ACTIVITY RATES

Gross reproduction rate and age groups	*Life expectation of 30 years*		*Life expectation of 50 years*		*Life expectation of 70 years*	
	Under-developed country activity rates	*Developed country activity rates*	*Under-developed country activity rates*	*Developed country activity rates*	*Under-developed country activity rates*	*Developed country activity rates*
Reproduction rate 4.0						
10 years and over. .	100	100	100	100	100	100
10-19 years	25	18	27	19	28	20
20-44 years	58	65	57	64	56	64
45-64 years	15	16	14	15	14	14
65 years and over. .	2	1	2	2	2	2
Reproduction rate 1.0						
10 years and over. .	100	100	100	100	100	100
10-19 years	9	6	9	7	10	8
20-44 years	46	51	44	49	43	49
45-64 years	34	36	33	36	32	34
65 years and over. .	11	7	14	8	15	9

The reduction of mortality has little effect and the decline in fertility produces aging from the base and at the apex of the active population pyramid. With developed instead of under-developed country activity rates the proportion of young adults (20-44 years) increases.

It was seen above that the reduction of fertility increased the proportion of active males. This was an effect favourable to the production of wealth. We now see that the reduction of fertility produces aging of the active population. It is difficult to determine whether this aging should be considered an advantage or a handicap. It is obvious that some of the worker's powers decrease with age: (physical strength, eyesight and acuteness of the senses generally) but a worker over forty has more experience than a worker of twenty and the one factor may offset the other.

(c) *Rates of entry into the labour force, withdrawal from the labour force, and variation of the active population in stable populations*

The active population like the total population is being continuously replaced: the entry of young people into the labour force increases it whereas deaths and retirement reduce it.[11] These three components depend on mortality, fertility and rates of activity. They are therefore indirectly related to the phenomena of structural aging and behaviour studied above. Their significance is evident.

(i) The rate of entries into the labour force is a factor affecting the mobility of the active population, as new entrants can in principle be directed to the occupations where they are most needed. It also gives indications of vocational training requirements.

(ii) The rate of withdrawals (i. e., the sum of the withdrawal rates due to death and the withdrawal rate due to retirement) is an index of the openings vacant before new employment opportunities are created.

(iii) The difference between the entry rate and withdrawal rate corresponds to the rate of variation of the active population and indicates the new employment opportunities that must be created if full employment

[11] No account has been taken of the effects of emigration and immigration which can be highly significant in certain specific cases.

TABLE 36. — COMPONENTS OF THE ANNUAL VARIATION OF THE ACTIVE MALE POPULATION IN STABLE POPULATIONS CORRESPONDING TO DIFFERENT LEVELS OF MORTALITY. FERTILITY AND MALE ACTIVITY RATES

Gross reproduction rate	Expectation of life 30 years		Expectation of life 50 years		Expectation of life 70 years	
	Under-developed countries activity rates	Developed countries activity rates	Under-developed countries activity rates	Developed countries activity rates	Under-developed countries activity rates	Develope countries activity rates
	A. — *Rate of entry into labour force per 1,000 active males*					
4.0	44.8	44.7	49.3	48.9	52.4	51.4
3.0	37.1	37.6	41.0	41.0	43.7	43.7
2.0	27.5	28.8	30.3	31.4	32.7	33.7
1.0	14.7	16.5	16.1	17.8	17.5	19.2
	B. — *Rate of retirement per 1,000 active males*					
4.0	0.7	2.5	0.9	2.8	0.9	2.9
3.0	0.9	3.3	1.3	3.9	1.3	3.9
2.0	1.7	5.0	2.3	6.0	2.7	6.2
1.0	3.3	9.2	5.1	11.4	6.3	12.1
	C. — *Rate of withdrawal through death per 1,000 active males*					
4.0	20.1	20.3	9.3	9.2	3.9	3.5
3.0	22.1	22.1	10.9	10.2	4.9	4.2
2.0	26.6	25.1	13.8	12.1	7.1	5.6
1.0	36.6	32.2	21.4	16.8	12.9	9.0
	D. — *Rate of variation in the active population,[a] per 1,000 active males*					
4.0	24.0	21.9	39.1	36.9	47.6	45.0
3.0	14.0	12.2	28.8	26.9	37.4	35.6
2.0	— 0.9	— 1.4	14.2	13.3	22.9	22.0
1.0	— 25.2	— 24.8	— 10.3	— 10.4	— 1.7	— 1.8

[a] Theoretically these rates are the same as the rates of variation of stable populations (see tables 15 and 16). The differences observed are attributable to the approximations due to the method employed.

is to be maintained [12] The rate of variation also gives information concerning the volume of investment in new productive facilities required annually to provide employment for the new entrants.

Table 36 shows the value of these rates for the various stable populations considered.

The reduction of mortality tends to increase entries and withdrawals due to retirement. It obviously leads to a decrease in withdrawals through death and a general decrease in total withdrawals.

The reduction of fertility has an opposite effect; it leads to a decrease in entries and an increase in withdrawals due to retirement and death.

Transition from under-developed to developed countries behaviour has virtually no effect on entries; it very substantially increases withdrawals due to retirement, slightly decreases withdrawals due to death and causes a slight increase in total withdrawals from activity.

The most important changes occur in the rate of variation of the active population, the reduction of mortality and the reduction of fertility each having opposite effects on entries and withdrawals. The reduction of mortality tends to increase the rate of variation whereas the reduction of fertility tends to reduce it.

Table 37 shows the relation between withdrawals due to death and withdrawals due to retirement.

It can be seen that these factors considered—reduction of mortality, reduction of fertility and change of function —all work in the same direction, i. e., towards an increase in withdrawals due to retirement as compared to total withdrawals. An under-developed country with an expectation of life of 30 years and a gross reproduction rate of 4 would have one withdrawal due to retirement for every 28.7 withdrawals due to death. At the other end of the scale, a developed country with an expectation of life of 70 and a gross reproduction rate of one would have more withdrawals due to retirement than withdrawals due to death, the ratio being 0.7 deaths to one retirement.

As has been pointed out, the method adopted permits a systematic analysis of the effects of the various factors considered, but some of the results obtained are purely theoretical because they relate to types of population that are not found in practice. Actual populations can be classified according to a few well-defined demographic circumstances. The results relating to some stable populations which correspond most closely to actual populations are therefore shown in table 38. Three types of population have been selected:

(*a*) A population with high mortality (expectation of life at birth 30 years) and high fertility (gross reproduction rate 3.5), the standard under-developed country activity table being used. This case corresponds to under-developed countries where no economic or social development or improvement of health conditions have taken place.

(*b*) A population with high fertility (gross reproduction rate 3.5), but with a reduction of mortality (expectation of life at birth 50 years). The demographic conditions are those of the populations of under-developed countries where mortality has begun to decline but fertility is unchanged. The two activity tables have been used.

(*c*) A population with low mortality (expectation of life at birth 70 years) and low fertility (gross reproduction rate 1.5). The standard developed country activity

[12] The various rates are obtained as follows:

The annual rate of entry into the labour force is the difference between the activity rates of two consecutive age groups. This assumes only one entry and one withdrawal per worker, i.e., that there are no entries followed by withdrawal and subsequent re-entry. This assumption can be accepted in the case of male workers, but would not be valid for female workers.

The annual rate of withdrawal due to death at age a is $q\,(a)$, the probability of dying at age a. This assumes that mortality is the same for the active and the inactive population. This is certainly not the case but the resulting error in the calculation is negligible.

The annual rate of withdrawal due to retirement S is obtained as follows: if $t\,(a)$ is the activity rate at age a and $t\,(a+1)$ the activity rate at age $a+1$

$$S = \frac{t\,(a) - t\,(a+1)}{t\,(a)}$$

This formula is simplified and a correction should be made to take into account deaths between a and $a+1$. The correction is, however, very small.

The annual rate of total withdrawal Q is as follows:

$$1 - Q = (1 - S)\,(1 - q) \text{ whence}$$
$$Q = S + q - Sq$$

Sq is small and Q can be assimilated to $S + q$, i.e., to the sum of the rates of withdrawal due to retirement and withdrawal due to death.

TABLE 37. — RATIO IN THE ACTIVE MALE POPULATION OF WITHDRAWALS DUE TO DEATH AND WITHDRAWALS DUE TO RETIREMENT, IN STABLE POPULATIONS CORRESPONDING TO DIFFERENT LEVELS OF MORTALITY, FERTILITY, AND MALE ACTIVITY RATES

Gross reproduction rate	*Expectation of life 30 years*		*Expectation of life 50 years*		*Expectation of life 70 years*	
	Under-developed countries activity rates	*Developed countries activity rates*	*Under-developed countries activity rates*	*Developed countries activity rates*	*Under-developed countries activity rates*	*Developed countries activity rates*
4.0	28.7	8.1	10.3	3.3	4.3	1.2
3.0	24.7	6.7	8.4	2.6	3.8	1.1
2.0	14.8	5.0	6.0	2.0	2.6	0.9
1.0	11.1	3.5	4.2	1.5	2.0	0.7

table is used. This case applies to the populations of most developed countries.

In under-developed countries where a reduction of mortality is occurring such that the expectation of life at birth is increasing from 30 to 50 years, and where fertility is remaining at its initial level (R = 3.5), the rate of entry increases by 10 per cent, the rate of withdrawal declines by half and the rate of variation increases by nearly 80 per cent. The change of function has no substantial effect, except as regards the distribution of withdrawals between withdrawals due to death and withdrawals due to retirement, the proportion of the latter being substantially increased.

The transition from the "under-developed" stage with medium mortality and high fertility (expectation of life at birth 50 years and gross reproduction rate 3.5) to the "developed" stage (expectation of life at birth 70 years and gross reproduction rate 1.5) is marked by a radical change in the principal terms: entries decrease by nearly 40 per cent and withdrawals increase by about 25 per cent, so that the rate of variation is reduced by two-thirds and is only half that of the under-developed countries with high mortality. Withdrawals due to retirement exceed withdrawals due to death.

It has been seen that the rate of variation is an index of the investments that must be made to provide full employment. For the stable population corresponding to an under-developed country with high mortality considered here the figure is 191 per 10,000. This means that every year 10,000 workers must devote part of their labour to the production of facilities for the employment of 191 new entrants. If mortality declines in accordance with the assumptions accepted earlier, and fertility remains high, the 10,000 workers must produce facilities for 339 new entrants (319 if the activity function is modified); if fertility declines at the same time as mortality (with the developed countries activity function) the number of new entrants will be only 100.

(d) *An actual population: Brazil*

Using stable populations it has been possible to show clearly the role of aging in the trend of the active population. However the preceding calculations ignore the time factor and do not permit evaluation of certain practical problems related to the grouth of the active population. From the point of view of full employment, for instance, it is important to know whether the increase of the expectation of life at birth from 30 to 50 years or from 50 to 70 years will take place in ten or in fifty years. The use of demographic projections makes it possible to obtain a truer picture of the variations that may be expected during a given period, for example thirty years.

TABLE 38. — COMPONENTS OF THE ANNUAL VARIATION OF THE ACTIVE MALE POPULATION IN STABLE POPULATIONS AT THREE DIFFERENT PHASES OF DEMOGRAPHIC EVOLUTION

Components	*Stable population A (Under-developed countries with high mortality)*	*Stable population B (Under-developed countries with medium mortality)*		*Stable population C (Developed countries)*
		Under-developed countries rates activity	*Developed countries rates activity*	
Rate of entry into labour force per 1 000 active males.	41.0	45.1	45.0	26.4
Rate of withdrawals per 1 000 active males :				
Withdrawals due to retirement	0.8	1.1	3.4	9.1
Withdrawals due to death.	21.1	10.1	9.7	7.3
Total withdrawals	21.9	11.2	13.1	16.4
Rate of variation of active population per 1 000 active males.	19.1	33.9	31.9	10.0
Ratio of withdrawals due to death to withdrawals due to retirement (= 1.0). . .	26.3	9.2	2.8	0.8
Age structure of stable populations :				
0-14 years	44.7	48.1		29.3
15-60 years	51.9	48.3		57.7
60 years and over . . .	3.4	3.6		13.0

Stable population A: Expectation of life at birth 30 years; gross reproduction rate 3.5; average under-developed countries activity rates.

Stable population B: Expectation of life at birth 50 years; gross reproduction rate 3.5.

Stable population C: Expectation of life 70 years; gross reproduction rate 1.5; average developed countries activity rates.

Table 39 gives the results of the calculation as applied to the population of Brazil for the period 1950-1980, obtained by the method used for stable populations. The projections used are those calculated by the Secretariat of the United Nations. [13] The following assumptions have been selected : [14]

Assumption A : Constant mortality and fertility

Assumption B : Decreasing mortality and constant fertility

Assumption C : Decreasing mortality and fertility

Two assumptions have been made in regard to the activity table :

(1) The activity table observed in Brazil in 1950 is assumed to remain unchanged throughout the period considered ;

(2) It is assumed that the activity rates observed in Brazil in 1950 vary so that the rates in 1980 are the same as those observed in Sweden in 1950.

The calculations refer to the male population only and only the results for the beginning and end of the period considered are used in the table.

Assumption A has been included purely for purposes of comparison and brings out more clearly the effects due to variations of mortality and fertility; it is however highly improbable given the current trend of mortality in Brazil.

Comparison of the projections based on assumption B with the projections based on assumption A (columns 2 and 4 or 3 and 5 of table 39) provides a measure of the effects of the reduction of mortality on the grouth of the active population of Brazil if fertility continues at the present level. The main effect is the reduction of the rate of withdrawal due to death in the active population, which sharply reduces the total rate of withdrawal and increases the rate of growth of the active population. At the same time the ratio of the active male population to the total active population is slightly reduced as a result of the rejuvenation at the base of the population produced by the reduction of mortality. The

[13] *Future Population Estimates by Sex and Age. Report II: The Population of South America 1950-1980.* United Nations publication, Sales No. : 1955.XIII.4.

[14] Assumptions B and C correspond to the "high assumption" and the "low assumption" of the report cited. Assumption A is based on constant mortality at the 1950 level.

TABLE 39. — COMPONENTS OF VARIATION OF THE ACTIVE MALE POPULATION OF BRAZIL, 1950-1955, AND PROJECTIONS FOR 1975-1980

Components	*1950-1955*	*Projections for 1975-1980*					
		Assumption A (constant mortality and fertility)		*Assumption B (declining mortality, constant fertility)*		*Assumption C (declining mortality and fertility)*	
		Constant activity rates	*Variable activity rates*	*Constant activity rates*	*Variable activity rates*	*Constant activity rates*	*Variable activity rates*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rate of entry into labour force per 1 000 active males.	38.8	38.3	39.4	40.8	40.0	35.3	36.0
Rate of withdrawal from labour force per 1 000 active males :							
Withdrawals due to retirement.	1.0	1.3	5.1	2.2	5.2	1.9	5.4
Withdrawals due to death.	14.4	14.8	14.7	10.4	10.2	10.7	10.3
Total withdrawals. . . .	15.4	16.1	19.8	12.6	15.4	12.6	15.7
Rate of variation of the active population per 1 000 active males.	23.4	22.2	19.6	28.2	24.6	22.6	20.3
Ratio of withdrawals due to death to withdrawals due to retirement	14.4	11.4	2.9	4.7	2.0	5.6	1.9
Ratio of the rate of variation to rate of entry into labour force (= 1.0)	0.60	0.58	0.50	0.69	0.62	0.64	0.56
Active males per 100 of the male population of all ages.	56.3	56.5	51.7	55.0	50.1	59.5	54.8
Age structure of the stable population in 1950 and 1980 :							
0-14 years	41.9	41.9		43.3		37.7	
15-60 years	53.9	53.5		51.6		56.5	
60 years and over . . .	4.2	4.6		5.1		5.8	

effects of the reduction of fertility associated with the reduction of mortality can be seen if the projections based on assumption C are compared with the projections based on assumption A (columns 2 and 6 or 3 and 7). As in the previous case there is a decrease in the rate of withdrawals from the active population as a result of the reduction of mortality, but this effect is almost entirely counterbalanced by a decrease in the rate of entry due to the aging of the population which is itself caused by the reduction of fertility. The effect on the rate of growth of the active male population at the end of the 25-year period considered in the projections is negligible. The ratio of the active male population to the total active population increases substantially as a result of aging, i. e., as a result of the increase in the proportion of adults of working age and the decrease in the proportion of children.

The effects of a modification of activity rates of the kind that may be expected to accompany the urbanization and industrialization of the country are shown by each of the projections based on assumptions B and C (columns 4 and 5 of assumption B and 6 and 7 of assumption C).

Modifications of the activity rate have little effect on the rate of entry into the labour force. (It should be noted, however, that these modifications result in considerable changes in the average age of entry). They substantially increase the rate of withdrawal due to retirement and therefore the total rate of withdrawal, so that the rate of increase of the active male population decreases. At the same time the ratio of the active male population to the total male population is considerably reduced, both by the raising of the average age of entry into activity and the lowering of the age of retirement.

On the whole the variations likely to occur in the movement of the active population in Brazil during the next thirty years are not very great. At the end of the demo-economic cycle considered (see columns 1 and 7) the really important changes are chiefly qualitative: only the distribution of withdrawals between withdrawals due to retirement and withdrawals due to death is substantially modified. It is chiefly during the "transitional period" when mortality alone is decreasing that the investments necessary to maintain full employment become very important. If activity rates remain the same, the rate of variation of the active population and the jobs that must be created for new entrants to the labour force increase at a rate which may cause difficulty (see the ratio of the rate of variation to the rate of entry, column 4, table 39). If on the other hand the activity table is modified and approximates to that of the developed countries, the proportion of active males decreases (see column 5).

3. "*Aging of the* élites"

It is frequently held that in a population where aging occurs at the apex of the pyramid, the highest posts are held by people of increasingly advanced age. This "aging of the *élites*" is a familiar phenomenon in modern times; the question is whether it is to be attributed to demographic aging. If the posts held by the various members of a population were chosen at random, a population with a high proportion of aged people would obviously be much more likely to have elderly leaders than a population with a low proportion of old people. However, this is clearly not the way in which the leaders of a country are recruited.

Let us suppose that a country has a political assembly of 500 elected members and let us assume in the interests of simplicity that they are elected for life from among people of 40 years of age. Initially the assembly will consist of 500 people of 40 years of age. The members will age, and whenever one of them dies he will be replaced by another aged 40; thus the average age of the assembly will increase and will tend towards a maximum limit corresponding to the expectation of life at 40 plus 40 years. At the same time the age composition of the assembly will tend towards that of the stationary population. This is an example of the aging of an *élite* which is largely independent of demographic aging and would occur regardless of variations of fertility and mortality. It is entirely due to the manner in which the members of the assembly are selected and the fact that at the outset the assembly consists of young members. When the maximum age is reached, there is no further change in the situation; there is no further aging. However, variations of mortality may affect the maximum age itself, and the reduction of mortality increases the maximum. If the expectation of life at 40 increases from 25 to 35 years the average maximum age of the assembly will rise from 65 to 75. There will then be further aging but demographic aging will still not be involved. In practice, of course, the membership of political assemblies is not determined in so simple a manner. Apart from the numerous exceptions which modify so rigid a pattern, the age of election may itself be affected by changes in the age structure. Nevertheless the membership of political assemblies is in fact determined in accordance with a pattern approximating to that indicated. It is not uncommon for the same representative to be continuously re-elected at a series of elections and the age at which representatives are first elected is often roughly the same. The hypothetical case considered thus indicates the process by which aging takes place in political assemblies.

A similar phenomenon may be observed in the case of university graduates. In very many cases, the number of graduates remains the same each year over a long period. If mortality is invariable the population of graduates will tend to follow the pattern of the stationary population. If the age of graduation is 20 and the expectation of life at 20 is 40 the average age of graduates will tend towards 60. A reduction of mortality would naturally increase this maximum and as in the preceding case aging would occur. The age of retirement may vary and would also have to be taken into account.

Academies of learned societies provide a somewhat different example. The members are usually co-opted; in other words, at the end of the year the survivors elect new members to replace those who died during the year. Let us assume that the members wish to rejuvenate the society and choose new members who are on the average thirty years younger than their predecessors. If the

average age of the academicians when the academy is founded is 40, a simple calculation shows that the average age will increase in the course of time as a result of the election of new members and will tend towards a maximum which will depend solely on the mortality level. [15] Here again the aging of an *élite* is largely independent of demographic factors and governed only by the method of selecting new academicians and the average age of the members at the starting point. The phenomenon is therefore one which occurs in all populations and at all times.

The reduction of mortality does, however, have some effect. It increases the average maximum age and aging is therefore increased. This additional aging is, however, fairly small as the reduction of mortality has been slight at the older ages.

It could undoubtedly be shown from concrete examples that aging in learned societies does follow the pattern indicated, but the material is scattered and not easy to assemble. Material relating to a similar case is furnished by censuses of population. The farmers in a given country can be considered, at any rate approximately, as a closed group in which each person who dies or stops working is replaced by one of his sons. As the difference between the average age of the fathers and the average age of the sons is always about 33 years, the age composition of the farmers must be such that the crude death and retirement rate of the group is 1/33 or, 30 per cent. This is in fact the figure observed in censuses. [16] But here again a reduction of mortality will lead to aging of the group so that the withdrawal rate will tend to return to 30 per cent.

In all these examples the aging of the group considered occurs because the size of the group is invariable. If instead of handing on the farm to one of his sons the father divided it among all his children, the number of farms would rapidly increase and the reduction of mortality would rejuvenate the population of farmers : farmers would be active longer, but when they died a larger number of young people would be introduced into the group. There would be the contrary effects frequently encountered elsewhere in this report and, as has been seen, rejuvenation would occur.

The aging was also due to the fact that initially the structure of the group considered was very different from the limiting structure. This is the position in countries in the course of development, where it is necessary to set up schools to train engineers, architects, foremen, etc. When development slows down, the structure is stabilized and aging occurs. The aging was latent and is merely manifested. It has therefore nothing to do with demographic evolution.

[15] It can be easily shown that the academy tends towards an age structure such that the crude death rate is equal to the reciprocal of the difference between the average age of deceased members and the average age of newly elected members. In the example chosen the difference is 30 years and the limiting age structure will be such that the death rate is 1/30, or, 33.3 per cent.

[16] In practice, fathers are not always replaced by their sons and the number of farms is not constant, so that the conditions required to confirm the theory are only approximately fulfilled.

B. Needs

1. *Total needs*

(a) *The consumption function*

It is a commonplace that consumption varies with age. Everyone knows that children and elderly people do not have the same needs as adults. Two methods of research have been used to study how needs change with age and both have produced almost the same results. The first method attempted to determine the actual consumption of individuals by means of surveys; the object of the second was to establish standards of consumption by estimating minimum subsistence requirements on the basis of sociological and physiological considerations. The first method can, of course, only be applied in countries where the minimum subsistence requirements are satisfied.

Both methods showed that the needs of a child are roughly the same as those of an elderly person and are about 70 per cent of the needs of an adult. [17] The percentage naturally varies according to the ages used to define childhood and old age. However, if the ages selected are reasonable, the variations are small. It should be pointed out that the scale may not apply in certain under-developed countries in which the distribution of consumer goods may be different from that indicated owing to the insufficiency of resources. However, if needs are to be evaluated *objectively*, it is necessary to leave out of account patterns of behaviour that are in most cases due solely to the low level of economic development.

Childhood is often considered as ending at fourteen and old age as beginning at sixty. Taking the needs of the adult as 1.0, the following scale will be adopted:

Needs of child	0.7
Needs of adult	1.0
Needs of aged person	0.7

It will also be assumed that this scale can be applied to non-working adolescents (before entry into the labour force) and non-working aged persons (after withdrawal from the labour force) as defined in the preceding chapter. In some cases owing to the form in which the statistics are presented the 0-19 group is taken instead of the 0-14 group and old age is considered to begin at 65. In such cases, the same scale will be used. It should be pointed out before going further that the scale of needs is only relative. It can of course be argued that in absolute terms the needs of an adult, for example, are the same everywhere and that there is no difference between the needs of an adult in India or in the United States. In practice, sociological or even climatic factors play a part in determining minimum requirements. To take an obvious example, the housing needs of an African negro are clearly not the same as those of a European. The former will be satisfied with a simple hut, whereas the

[17] For an application of the second method, see Bernard Quillon, *Besoins comparés des vieillards et des enfants.* Trois journées pour l'étude scientifique du vieillissement de la population, part IV, page 29, Alliance nationale, Paris, 1948.

latter will require a house. Below the scale of needs adopted will be applied without regard to the differences in the needs of various social groups. These differences should, however, be borne in mind in order to avoid absurd comparisons.

(b) *Needs per 1,000 population and burden supported by the active population*

Let us apply the scale adopted to the stable populations used previously. Table 40 gives the results of the calculations and shows the effects of variations of mortality, fertility and male activity rates on the needs of the various populations, the needs being expressed per 1,000 population and per 1,000 male workers.

The significance of the figures for needs per 1,000 population (part A of the table) should be explained. For a young stable population with a gross reproduction rate of 4.0 and an expectation of life at birth of thirty years (48.2 children 0-14 years and 2.6 persons of 60 years and over per hundred of the total population), the needs per 1,000 population are equivalent to the needs of 848 adults. With a relatively "aged" population having a gross reproduction rate of 1.0 and an expectation of life at birth of 70 years (19.5 children 0-14 years and 21.9 persons 60 years and over per hundred of the total population), the needs per 1,000 population are equivalent to the needs of 876 adults. These figures are obviously not affected by the level of the activity rates. Table 40 shows that with low mortality the needs per 1,000 population are less than if mortality is high. With low fertility, needs per 1,000 population are greater than if fertility is high. In the process of demographic aging as it has occurred (reduction of mortality accompanied by a reduction of fertility) there has thus been a certain compensating effect.

If needs are expressed per 1,000 active males (part C of table 40) an indication is given of the effects of aging on the burden supported by the workers who must produce the wealth necessary to satisfy the needs of the population. Strictly speaking, the entire labour force, male and female, should be considered but, as stated earlier, analysis of the economic activity of women involves statistical problems which make comparison of one population with another almost impossible. Consequently, only the active male population is considered, using the two activity functions for developed and under-developed countries. It can be seen that the reduction of mortality slightly increases the burden of needs supported by the active male population, whereas the reduction of fertility substantially reduces it.

It is of interest to make similar calculations for three stable populations selected in section A of this chapter to represent the initial intermediate and final stages of the "demographic revolution" observed in various countries in the course of their economic development.

For the initial stage the male activity rates for under-developed countries are used and for the last the male activity rates for developed countries. For the intermediate stage the average of the developed and under-developed countries. rates is used. The characteristics of the three stable populations are thus as follows:

Stable population A: gross reproduction rate 3.5;

TABLE 40. — ESTIMATED NEEDS PER 1 000 POPULATION AND PER 1 000 ACTIVE MALES IN VARIOUS STABLE POPULATIONS AT DIFFERENT LEVELS OF EXPECTATION OF LIFE AT BIRTH, GROSS REPRODUCTION RATE AND MALE ACTIVITY RATES

(Needs of 1 adult = 1.0)

Gross reproduction rate	Expectation of life 30 years		Expectation of life 50 years		Expectation of life 70 years	
	Under-developed countries activity rates	Developed countries activity rates	Under-developed countries activity rates	Developed countries activity rates	Under-developed countries activity rates	Developed countries activity rates
	A. — *Needs per 1 000 population*					
4.0	848	848	837	837	830	830
3.0	863	863	853	853	845	845
2.0	884	884	872	872	864	864
1.0	895	895	882	882	876	876
	B. — *Active males per 1 000 population*					
4.0	255	228	240	212	226	198
3.0	286	259	271	242	257	227
2.0	328	299	315	284	301	268
1.0	392	355	382	340	369	325
	C. — *Needs per 1 000 active males*					
4.0	3.323	3.717	3.489	3.950	3.672	4.191
3.0	3.016	3.331	3.146	3.538	3.288	3.723
2.0	2.699	2.955	2.766	3.069	2.870	3.224
1.0	2.283	2.521	2.309	2.599	2.373	2.694

expectation of life at birth 30 years; under-developed countries male activity rate.

Stable population B: gross reproduction rate 3.5; expectation of life at birth 50 years; average of under-developed and developed countries; male activity rates.

Stable population C: gross reproduction rate 3.5; expectation of life at birth 70 years; developed countries male activity rate.

The results of the calculations are given below together with the age structure of the three stable populations.

	Stable population A	*Stable population B*	*Stable population C*
Needs per 1 000 population. .	855	845	870
Active males per 1 000 population.	271	241	296
Needs per 1 000 active males .	3 154	3 506	2 939
Percentage of population aged:			
0-14 years.	44.7	48.1	29.3
15-64 years.	51.9	48.3	57.7
65 years and over . . .	3.4	3.6	13.0

Transition from the initial to the intermediate stage (compare populations A and B) results in an increase of the burden of needs per 1,000 active males. The increase is mainly due to the assumed modifications in the activity rates which imply a decrease in the relative number of workers in population B compared to population A. The increase in the percentage of children in the population due to the reduction of mortality is a further factor tending to increase the burden. Transition from the intermediate to the final stage (compare populations B and C) produces a reduction of the burden so that the burden in population C is less than in population A. This reduction is attributable to aging from the base of the pyramid resulting from the reduction of fertility. The effects of this aging are partly offset by the further fall in male activity rates in population C compared with population B.

In the final stage the balance between the effects of the reduction of fertility and the reduction of mortality is almost complete. But in comparing these populations it should be remembered that as was explained above the unit used in measuring needs (the needs of one adult) is not the same in the three populations. Hitherto it has been assumed that all workers are employed in the production of consumer goods but the workers have in fact three tasks to perform:

(*a*) To produce consumer goods using the existing means of production;

(*b*) To create new means of production to satisfy the needs of new arrivals; [18]

(*c*) To replace existing means of production as they are worn out.

The second task is only indirectly related to aging as its relative importance depends primarily on the rate of growth of the population. The third task is not dependent on demographic factors but as it takes the same form in practice as the second, i. e., the creation of new means of production, it must be taken into account here.

[18] This applies only to increasing populations.

Let us suppose that a population increases annually at the rate of 20 per 1,000. The capacity to produce consumer goods must increase annually at the rate of 20 per 1,000 to enable the new arrivals to satisfy their consumer needs. This means that a proportion of the labour force must be assigned every year to the manufacture of new means of production and consequently withdrawn from the production of consumer goods. It is generally agreed by economists that in order to increase productive capacity by a certain amount, four times that amount must be invested. [19] In the example chosen, in order to increase capacity to produce consumer goods by 20 per 1,000, investments equal in value to 80 per 1,000 of the total of consumer goods must be made. The investment of 80 per 1,000 of the total of consumer goods means that for every 1,000 workers engaged in the production of consumer goods, 80 are engaged in the manufacture of the means of production.

It will be arbitrarily assumed that 10 per 1,000 of the total means of production must be replaced annually. [20] In other words the investment of 40 per 1,000 of the total of consumer goods is required to replace existing means of production and 40 workers must be assigned to the work for every 1,000 workers producing consumer goods.

Under the assumptions adopted, $80 + 40 = 120$ workers are engaged in the manufacture of the means of production for every 1,000 workers using the means of production to manufacture consumer goods. Table 41 gives for the various stable populations already used previously the distribution of 1,000 workers between the two forms of activity: production of consumer goods and manufacture of the means of production.

If needs per 1,000 active males (figure in table 40) are divided by the proportion of workers engaged in the production of consumer goods (figures in table 41) we obtain the needs that must be satisfied by 1,000 male workers engaged in the production of consumer goods. The results of the calculation are given in table 42. Of two populations at the same level of economic development the population with more needs to satisfy has the lower level of consumption. Comparison of the figures in table 42 thus gives a relative measure of the levels of consumption of the various populations considered, provided the populations are at the same stage of economic development. [21]

The effect of the reduction of mortality and the resulting population changes on the level of consumption is best shown by the figures for needs per 1,000 active males engaged in the production of consumer goods. This effect is not absolutely the same, depending on the fertility level and activity behaviour but setting aside the extreme

[19] The ratio of 1 : 4 between the return and the investment is only an average. In the case under consideration an exact figure is unnecessary and an order of magnitude will serve.

[20] This assumes an average useful life of 100 years for capital goods.

[21] This does not mean that the manufacture of means of production has no bearing on the level of consumption of a population. But in the short run it is the manufacture of consumer goods that determines the level of consumption. The manufacture of the means of production determines the future manufacture of consumer goods, i.e., the future level of consumption.

TABLE 41. — DISTRIBUTION OF 1 000 WORKERS BETWEEN MANUFACTURE OF MEANS OF PRODUCTION AND MANUFACTURE OF CONSUMER GOODS IN VARIOUS STABLE POPULATIONS WITH DIFFERENT LEVELS OF EXPECTATION OF LIFE AT BIRTH AND GROSS REPRODUCTION RATE

Expectation of life at birth and distribution of workers	*Gross reproduction rate*			
	4.0	*3.0*	*2.0*	*1.0*
Expectation of life 30 years				
Total workers	1 000	1 000	1 000	1 000
Manufacture of means of production	121	87	35	—
Additional capacity	86	51	— [a]	— [b]
Replacement	35	36	35 [a]	— [b]
Production of consumer goods	879	913	965	1 000
Expectation of life 50 years				
Total workers	1 000	1 000	1 000	1 000
Manufacture of means of production	165	136	88	— [b]
Additional capacity	132	101	52	— [b]
Replacement	33	35	36	—
Production of consumer goods	835	864	912	1 000
Expectation of life 70 years				
Total workers	1 000	1 000	1 000	1 000
Manufacture of means of production	189	162	117	31
Additional capacity	157	128	82	— [c]
Replacement	32	34	35	— [c]
Production of consumer goods	809	839	883	969

[a] This population decreases by 1 per 1 000 per annum. It is therefore unnecessary to increase productive capacity annually and the proportion of means of production that must be replace annually owing to wear can be reduced from 10 to 9 per 1 000.

[b] This population decreases by over 10 per 1 000 per annum. It is therefore unnecessary to increase productive capacity or to replace a proportion of the means of production.

[c] This population decreases by 2 per 100 per annum. It is therefore unnecessary to increase productive capacity annually, and the proportion of the means of production that must be replaced annually owing to wear can be reduced from 10 to 8.

case of a gross reproduction rate of 1 it can be said that roughly speaking the transition from an expectation of life of 30 years to one of 70 years reduces the needs per inhabitant by 2 per 100, increases needs per male worker by 7 to 11 per 100 and increases needs per worker engaged in the production of consumer goods by 16 to 21 per 100. Other things being equal, the reduction of mortality considered reduces the level of consumption by 16 to 22 per 100. The reduction is partly due to the fact that the reduction of mortality reduces by 6 per 100 inhabitants the proportion of persons between 15 and 59 years of age in the population.

TABLE 42. — CONSUMER NEEDS PER 1 000 ACTIVE MALES ENGAGED IN THE PRODUCTION OF CONSUMER GOODS IN VARIOUS STABLE POPULATIONS WITH DIFFERENT LEVELS OF MORTALITY, FERTILITY AND MALE ACTIVITY RATES

(needs of 1 adult = 1.0)

Gross reproduction rate	*Expectation of life 30 years*		*Expectation of life 50 years*		*Expectation of life 70 years*	
	Under-developed countries-activity rates	*Developed countries-activity rates*	*Under-developed countries-activity rates*	*Developed countries-activity rates*	*Under-developed countries-activity rates*	*Developed countries-activity rates*
4.0	3 789	4 238	4 188	4 741	4 538	5 180
3.0	3 307	3 652	3 603	4 152	3 918	4 437
2.0	2 791	3 062	3 032	3 365	3 250	3 651
1.0	2 283	2 521	2 309	2 594	2 448	2 780

Table 43 summarizes the effects of the reduction of mortality on the needs of a population according to whether the needs are expressed per 1,000 population, per 1,000 male workers or per 1,000 male workers engaged in the production of consumer goods.

TABLE 43. — EFFECTS OF THE REDUCTION OF MORTALITY[a] ON NEEDS EXPRESSED ACCORDING TO VARIOUS CRITERIA, AND ON THE AGE STRUCTURE OF VARIOUS STABLE POPULATIONS WITH DIFFERENT LEVELS OF GROSS REPRODUCTION RATE AND MALE ACTIVITY RATES

Level of activity rates, criterion of needs and age groups	*Gross reproduction rate*			
	4.0	*3.0*	*2.0*	*1.0*
Needs per 1 000 population.	98	98	98	98
Needs per 1 000 active males :				
Under-developed countries' activity rates. . .	111	109	107	104
Developed countries' activity rates.	113	112	109	107
Needs per 1 000 active males engaged in the production of consumer goods :				
Under-developed countries' activity rates . . .	120	118	116	107
Developed countries' activity rates.	122	121	119	110
Percentage of population aged :				
0-15 years.	112	115	117	120
15-65 years.	88	89	90	90
65 years and over	100	105	110	112

[a] The figures in this table are those for stable populations with an expectation of life at birth of 70 years expressed as percentages of the corresponding figures for stable populations with an expectation of life at birth of 30 years. A measure is thus given of the effects of a reduction of mortality such that the expectation of life at birth rises from 30 to 70 years.

Table 44 summarizes the effects of the reduction of fertility on the same needs.

The results are almost entirely independent of the mortality level. Broadly speaking the transition from a gross reproduction rate of 4.0 to 1.0 increases needs per inhabitant by 5 to 6 per 100, reduces needs per male worker by 31 to 36 per 100 and reduces needs per male worker engaged in the production of consumer goods by 40 to 46 per 100. Other things being equal, the extreme reduction of fertility considered raises the level of consumption by 40 to 46 per 100. The increase is principally due to the fact that the reduction of fertility increases the proportion of persons between 15 and 59 years of age in the population by 32 to 35 per 100.

(c) *Utilization of the means of production*

So far we have spoken of productive capacity without considering whether the means of production were actually utilized; but simply to possess the productive capacity required to achieve a given object is not enough: there must be workers to utilize it. There is then another factor to be taken into consideration: the productivity of the employment created by investment. It is important to distinguish between two concepts: the productivity of investment and the productivity of the employment created by that investment. The productivity of investment means the ratio between the capital invested and the income it produces. As we have already said, economists generally assume that on an investment of 4, the income will be 1. The productivity of the employment created by a given investment is the average [22] production per worker.

[22] It is assumed that the unit chosen makes it possible to compare the production of all workers.

TABLE 44. — EFFECTS OF THE REDUCTION OF FERTILITY[a] ON NEEDS EXPRESSED ACCORDING TO VARIOUS CRITERIA AND ON THE AGE-STRUCTURE OF VARIOUS STABLE POPULATIONS WITH DIFFERENT LEVELS OF EXPECTATION OF LIFE AT BIRTH AND MALE ACTIVITY RATES

Level of activity rates, criterion of needs and age groups	*Expectation of life at birth (in years)*		
	30	*50*	*70*
Needs per 1 000 population.	106	105	106
Needs per 1 000 active males :			
Under-developed countries activity rates.	69	66	65
Developed countries activity rates . .	68	66	64
Needs per 1 000 active males engaged in the production of consumer goods :			
Under-developed countries activity rates.	60	55	54
Developed countries activity rates . .	59	55	54
Percentage of population aged :			
0-14 years	34	35	36
15-59 years	132	133	135
60 years and over	719	796	842

[a] The figures in this table are for stable populations with a gross reproduction rate of 1.0 expressed as a percentage of the corresponding figures for stable populations with a gross reproduction rate of 4.0. A measure is thus given of the effects of a reduction of mortality such that the gross reproduction rate changes from 4.0 to 1.0.

Let p be the average production of the existing employment. Let us suppose that investment I occupies K workers, creating k posts, and that the workers em-

ployed in these posts have an average production of P. The product of $k \times P$ will be the increase of the productive capacity effected by investment I. In terms of consumer goods, investment I is equal to the product of the K workers employed in producing them multiplied by the average production, p, of the existing posts. [23] If h is the yield on the investment, then $kP = \frac{Kp}{h}$.

In this calculation $h = 4$, whatever the value of P. In other words, we have supposed that the yield on the investment will be the same, whatever P may be. This is true, of course, only as a first approximation and providing that P does not vary too much.

Let us go back to the stable population we used earlier as an example. It increased at the rate of 20 per 1,000. In order to ensure the renewal of the means of production, for every 1,000 workers employed on the production of consumer goods in that population, there had to be 120 manufacturing the means of production. In order to avoid either under-employment or over-employment, those 120 workers have to create thirty posts (twenty to keep pace with the increase in the population and ten to ensure the renewal of the means of production). Therefore

$$30\ P = \frac{120\ p}{4 \times 1}, \text{ so that } P = p.$$

The productivity of the posts created by the investment must be the same as that of the existing posts. This conclusion was obvious in any case.

Let us suppose that the posts created are 50 per cent more productive than the existing ones. The 120 workers will create the following number of posts :

$$k = \frac{120}{4 \times 1.5} = 20.$$

The investment creates twenty posts when thirty are needed. In our example there will therefore be under-employment; but the proposed goal is achieved. Production will increase by the amount required to satisfy the needs of the whole community. Only the system of distribution will be upset; there will be ten workers who will remain outside the normal distribution circuit.

Now let us suppose that the posts created are 50 per cent less productive than the existing ones. In this case, the number of posts created is equal to

$$k = \frac{120}{4 \times 0.5} = 60.$$

In this case, there are only thirty workers for sixty posts, which means that half the post will be vacant. The *productive capacity* will have been increased by the desired amount, but not *production* itself, as part of the means of production will not be utilized. It must be emphasized that this, of course, is nothing more than a hypothetical example. Actual conditions are much more flexible and there are thousands of ways of absorbing the under-employment produced by making use of capital to create highly productive employment. The reduction of working hours, the raising of the school-leaving age, the lowering of the retirement age and, generally speaking, all the social measures which improve working conditions are possible only because investment creates more productive posts than the existing ones.

(d) *Transition from one stable population to another*

So far, when we have compared the consumption level of populations by comparing the population's needs with the number of workers employed on the production of consumer goods, we have assumed that the populations had reached stability, without inquiring how that stability had been achieved. What happens when there is change from one state of stability to another ?

Let us consider two states of stability, A and B. In the former, the population is increasing at the rate of 20 per 1,000. For every 1,000 workers manufacturing consumer goods, 120 must be manufacturing the means of production. In other words, out of 1,000 workers 893 are employed on the manufacture of consumer goods and 107 on the manufacture of the means of production.

In stability B, the population increases at the rate of 30 per 1,000. For every 1,000 workers manufacturing consumer goods, 160 must be manufacturing the means of production; that means that out of 1,000 workers, 138 are employed on the manufacture of the means of production and 862 on the manufacture of consumer goods.

All things being equal, the consumption levels of populations A and B are in the following ratio: $862/893 = 0.965$. The consumption level of population B is 3.5 per cent lower than that of population A.

Now let us imagine the *same population* changing from state A to state B. To simplify matters we shall assume that the change from the old demographic conditions to the new ones is instantaneous. The foregoing argument leads to the conclusion that in the end consumption must drop by 3.5 per cent. Let us see how this drop actually occurs. Out of 1,000 workers in the new state B 31 [24] more are manufacturing the means of production and 31 less are producing consumer goods. The workers can of course be redistributed immediately, that is to say, as soon as the demographic conditions change, in which case there will be a sudden drop of 3.5 per cent in consumption. That, however, will leave some of the means of production idle, i. e., those which the 31 workers who are no longer producing consumer goods have left vacant. Could these means of production not be used to *retard* the decline of consumption ?

Let us withdraw a number of workers, T, which is less than 31, from the production of consumer goods. Out of 1,000 workers, there are then (107 + T) workers employed on the manufacture of the means of production, who create a number of posts, t, with a productivity, P, so that

$$t = \frac{(107 + T)\ p}{4\ P}.$$

[23] In other words, the investment is equal to what the workers applying the investment would produce if they were used in the production of consumer goods.

[24] 138 — 107 = 31.

Moreover, the T workers withdrawn from the production of consumer goods leave T posts with productivity p vacant. Under the new distribution of labour, 893 — T workers are employed on the manufacture of consumer goods. Their numbers will increase by 3 per cent per year and, as 1 per cent of their means of production must be replaced annually, there will be 0.04 (893 — T) workers without the corresponding means of production. If under- and over-employment are to be avoided, it is necessary that

$$0.04\,(893 - T) = T + \frac{(107 + K)\,p}{4P}. \qquad (1)$$

and production will increase by

$$tP + Tp = \frac{(107 + K)\,p + Kp}{4}. \qquad (2)$$

Let us suppose, to begin with, that $P = p$, i. e., that posts which are as productive as the existing ones continue to be created. Equation (1) then gives $T = 6.9$ and equation (2) shows that the productive capacity increases by $35.4p$. What is the effect on consumption ? Out of 1,000 workers, (893 — 6.9), instead of 893, as previously, are now producing consumer goods. The ratio of one level of consumption to the other is therefore — 6.9/893, i. e., 99.22 percent, so that the consumption level drops by 0.78 per cent.

The following year, the situation is approximately the same. [25] Out of 1,000 workers, about 6.9 more will be withdrawn from the production of consumer goods and employed on the manufacture of the means of production, which will cause a further fall of 0.78 per cent in the level of consumption, and so on for about five years, at which time the new distribution will be reached and the level of living will have dropped by 3.5 per cent altogether. Thus, thanks to a progressive redistribution of labour between the two sectors, the fall in the level of consumption will have been slowed down and there will have been full employment of manpower and of the means of production the whole time.

The preceding calculation may seem an unnecessary nicety. The reader may say that, since the level of consumption must fall sooner or later, it may as well do so at once. But let us consider the inverse movement; that is to say, let us suppose that the same population goes from state B to state A. Out of 1,000 workers, 31 who in state B were employed in the manufacture of the means of production must be transferred to the production of consumer goods. But where are these 31 workers going to find the means to produce consumer goods? The means of production for them do not exist. They must be created by transferring only a fraction of the 31 workers, while the remaining fraction creates the means of production to be used by the fraction transferred. This time, an abrupt transition from distribution B to distribution A *is therefore impossible.* The equation which emerges is exactly similar to equation (1) and if $p = P$, it will be found once more that *only* 6.9 workers out of 1,000 can be transferred annually from the manufacture of the means of production to the production of consumer goods.

The case where P does not equal p opens new horizons. To clarify our thinking, let us suppose that P is 50 per cent higher than p. Equation (1) then gives 15.5 for the value of T and equation (2) shows that the productive capacity increases by $46.1p$. The fall in the level of consumption is now only 0.61 per cent (instead of 0.78 per cent, as in the previous case). But the most important thing is that labour is redistributed between the production of consumer goods and the manufacture of the means of production as early as the second year (15.5 + 15.5 = 31) and by the end of the second year, consumption has dropped by only 1.22 per cent. Therefore, by making investments which create employment with a 50 per cent higher productivity than the existing employment, the drop in the living standard can be limited. But what is the exact meaning of making investments which create more productive employment than that at present existing ? It simply means achieving the economic development of the population and this brings us to the type of problems which arise when the level of consumption of a population is to be raised.

This is a final point which should be taken into consideration if the combined problems of aging and the satisfaction of a population's needs are to be viewed in their widest perspective. The explanations we have already given show how such a study should be undertaken. Let us take as an example the same stable population of which we have been speaking. Its rate of increase is 20 per 1,000 and for every 1,000 workers producing consumer goods, 120 are manufacturing the means of production. The productive capacity increases annually by 20 per 1,000, which is just enough to maintain the average level of consumption. Let us suppose that this level of consumption is to be raised by 1.5 per cent a year; [26] in order to achieve this, the productive capacity must be increased by 1.5 per cent over and above the 3 per cent required to meet the population increase and the renewal of the existing means of production. In order to achieve this additional increase of 1.5 per cent, four times that amount must be invested, i. e., 6 per cent of the consumer goods. In other words, for every 1,000 workers producing consumer goods, a further 60 workers must be added to the 120 already manufacturing the means of production. It would then be easy to determine what yield on investments would be required to ensure the effective utilization of the means of production thus created. Such a calculation, however, is obviously beyond the scope of this report. A systematic study of such a subject would have to cover a much wider field. In particular, in the problems we have touched upon we have not taken into account a factor which is very common in under-developed countries, i. e., the existence of considerable underemployment.

2. *The different types of needs*

So far we have spoken of need as though it meant all needs as a whole, but it is quite obvious that different problems emerge, when a distinction is made between

[25] In actual fact, the situation is not quite the same. At the outset, there are (893 — 6.9) workers producing consumer goods, instead of 893.

[26] Which would mean roughly doubling the average consumption in fifty years.

the different needs composing the whole. In particular, the scale used for the whole cannot be used for separate needs. It therefore follows that demographic development has different effects according to the need under consideration. In other words, the distribution of the different needs, varies as well as the total need. We cannot of course, consider all the needs in turn; we shall therefore restrict ourselves to a few of the most important cases.

(a) *Foodstuffs*

The studies undertaken to determine total needs have involved consideration of the calorie requirements of children, adults and old people. The study carried out by Mr. Bernard Quillon, which we have already mentioned, establishes the following indices for calorie needs: [27] children, 75; adults, 100 and old people, 71. This scale is very close to the one we have adopted for total needs; hence its application adds nothing new to our previous conclusions.

Everything we have said about total needs applies also to total food requirements. It would not be quite the same, however, if one particular foodstuff was considered. Here, for instance, are Mr. Quillon's scales for milk, sugar and meat:

	Milk	*Sugar*	*Meat*
Children.	160	50	40
Adults.	100	100	100
Old people.	160	75	40

[27] Let us recall that the needs calculated by Mr. B. Quillon were worked out on standard consumption rates based on physiological considerations. They are therefore of universal application.

The following table compares total needs and milk requirements for the three typical stable populations already used, in terms of needs per 1,000 inhabitants (taking the adult's requirement as the basic unit).

	Stable population A (Expectation of life: 30 years: reproduction rate: 3.5)	*Stable population B (Expectation of life: 50 years: reproduction rate: 3.5)*	*Stable population C (Expectation of life: 70 years reproduction rate: 1.5)*
Total requirements per 1 000 inhabitants	855	845	873
Milk requirements per 1 000 inhabitants	1 288	1 310	1 254
Percentage of the population aged:			
0-14 years.	44.7	48.1	29.3
15-60 years.	51.9	48.3	57.7
60 years and over. . . .	3.4	3.6	13

It will be noted that the effect that the aging produced by variations in the mortality and fertility rates has on milk requirements is the opposite of its effect on total needs. The variations are, however, small in either direction. This confirms our theory that the results do not depend very much on the scale adopted for needs. Roughly it may be said that all our conclusions with regard to total needs are applicable to all food requirements taken individually.

(b) *Services*

Many writers have stressed the importance of the increase in "tertiary" needs with aging. The influence this might have on the trend of demand might well affect many economic factors. The effects of

TABLE 45. — NUMBER OF MALES FROM 5 TO 24 YEARS OLD IN EDUCATIONAL ESTABLISHMENTS, PER 1 000 ACTIVE MALES, IN DIFFERENT STABLE POPULATIONS AT DIFFERENT MORTALITY AND FERTILITY LEVELS AND MALE ACTIVITY AND SCHOOL ATTENDANCE RATES

Gross reproduction rate	*Expectation of life 30 years*		*Expectation of life 50 years*		*Expectation of life 70 years*	
	Activity rates in under-developed countries [a]	*Activity rates in developed countries* [a]	*Activity rates in under-developed countries* [a]	*Activity rates in developed countries* [a]	*Activity rates in under-developed countries* [a]	*Activity rates in developed countries* [a]
4.0.	515	685	592	787	648	868
3.0.	413	544	471	626	517	690
2.0.	288	380	329	437	365	488
1.0.	139	189	157	215	175	242

	School attendance rate per 100 inhabitants of each age group			
	5-9	*10-14*	*15-19*	*20-24*
Under-developed countries	100.0	69.2	18.2	6.9
Advanced countries	100.0	95.1	31.1	9.3

[a] The school attendance rates have been taken as equal to the difference between the male activity rates and 1 in the five-year age groups from 10 to 24 and it has been assumed that all children between the ages of 5 and 9 attended school.

structure on the volume of services required may be roughly measured by taking as a scale of those needs the item "miscellaneous expenses" in the budgets used by Mr. Quillon.

According to his study, the indices of the needs of the major age groups are as follows:

Children.	67
Adults.	100
Old people.	87

Here again, the scale is not very different from the one we adopted for total needs and all that we have said about these needs is therefore applicable to the needs for services.

(c) *Schools needs*

School needs exist only between very narrow age limits and the attitude to school attendance varies with the attitude to economic activity. We have assumed that all children between the ages of 5 and 9 need to attend school,[28] and that from 10 to 24, the school attend-

[28] In most countries the age at which children start attending school is actually 6. It is because statistics are given in five-year age groups that we have taken the group from 5 to 9 as a whole.

TABLE 46. — ESTIMATE OF ANNUAL SCHOOL CONSTRUCTION NEEDS PER 1 000 ACTIVE MALES IN DIFFERENT STABLE POPULATIONS AT DIFFERENT MORTALITY AND FERTILITY LEVELS AND DIFFERENT MALE ACTIVITY AND SCHOOL ATTENDANCE RATES

(Unit = construction required for one male pupil)

Gross reproduction rate and school construction needs	*Expectation of life 30 years*		*Expectation of life 50 years*		*Expectation of life 70 years*	
	Activity rates in under-developed countries [a]	*Activity rates in developed countries* [a]	*Activity rates in under-developed countries* [a]	*Activity rates in devoloped countries* [a]	*Activity rates in under-developed countries* [a]	*Activity rates in developed countries* [a]
Reproduction rate 4.0						
Total construction needs .	19	24	29	39	38	51
For increase..	14	17	23	31	32	42
For replacement . . .	5	7	6	8	6	9
Reproduction rate 3.0						
Total construction needs .	10	13	19	24	25	33
For increase..	6	8	14	18	20	26
For replacement . . .	4	5	5	6	5	7
Reproduction rate 2.0						
Total construction needs.	3 [b]	4 [d]	8	10	13	16
For increase..	— [c]	— [c]	5	6	9	11
For replacement . . .	3	4	3	4	4	5
Reproduction rate 1.0						
Total construction needs .	— [e]	— [f]	— [g]	— [h]	3 [i]	4 [k]
For increase..	— [e]	— [f]	— [g]	— [h]	— [j]	— [l]
For replacement . . .	— [e]	— [f]	— [g]	— [h]	4	5

[a] It has been assumed that, between the ages of 10 and 24, school attendance rates were equal to the difference between the male activity rates and 1 in the five-year age-groups and that all children of from 5 to 9 years of age attended school. When the population decreases, there are no longer fresh needs every year but places which become vacant. The total new construction needs are then equal to the difference between the rate of replacement needs and the rate of vacancies occurring.

[b] The difference between the rate of replacement needs (2.9 per 1 000) and the vacancy rate.

[c] The vacancy rate is 0.3 per 1 000.

[d] Difference between the rate of replacement needs (3.8 per 1 000) and the vacancy rate (0.3 per 1 000).

[e] There are no total needs because the rate of replacement needs (1.4 per 1 000) is lower than the vacancy rate (3.6 per 1 000).

[f] There are no total needs because the rate of replacement needs (1.9 per 1 000) is lower than the vacancy rate (4.9 per 1 000).

[g] There are no total needs because the rate of replacement needs (1.6 per 1 000) is lower than the vacancy rate (1.7 per 1 000).

[h] There are no total needs because the rate of replacement needs (2.2 per 1 000) is lower than the vacancy rate (2.3 per 1 000).

[i] Difference between the rate of replacement needs (3.7 per 1 000) and the vacancy rate (0.3 per 1 000).

[j] The vacancy rate is 0.3 per 1 000.

[k] Difference between the rate of replacement needs (4,9 per 1 000) and the vacancy rate (0.5 per 1 000).

[l] The vacancy rate is 0.5 per 1 000.

ance rate is equal to the difference between the male activity rate and 1. In that case, the school attendance rates are as those shown at the end of table 45. [29]

These two scales have been used to estimate the "male school population" of each of the different stable populations. The figures in table 45 have been obtained by comparing these figures with those of the active male population. For instance, in a stable population with a gross reproduction rate of 3.0 and a life expectation of 50 years, 1,000 workers are required for the education of 471 boys in an under-developed country and 626 in an advanced country. These figures show, in short, the burden that the maintenance of schools represents. They indicate, in particular, the volume of teaching staff required. Allowing one teacher for every 30 pupils, the requisite proportion of teachers among every 1,000 workers will be found by dividing the figures in table 45 by 30. These figures refer to boys only and they should therefore be multiplied roughly by two to arrive at the total needs for boys and girls. In that case the female activity rate would of course have to be taken into account in estimating the average cost of schools per worker.

The school problem cannot, however, be completely solved merely by the provision of the necessary schools. New schools must be built every year to meet the population increase and schools which are to be of any further use must be replaced. This new construction is shown in table 46 in terms of male pupils per 1,000 active males. Finally, corresponding with the construction of new schools, new teachers must be trained.

As might be expected, a decline in mortality, which, we must remember, rejuvenates the age structure at the base of the pyramid, increases the cost of the school population and the need for new buildings. A drop in the fertility rate has the opposite effect but to a more marked degree; during the demographic revolution, the effects of the drop in the fertility rate have been by far the most important, as can be seen from table 47. The male school population per 1,000 male workers is 33 per cent larger in stable population B than in stable population A. This increase is the combined effect of three factors: the increase in the proportion of children in the population as a result of the lower mortality rate, the higher school attendance rates inseparable from economic and social development, and the decrease in male activity rates. In population C, the school population in terms of 1,000 male workers is 39 per cent lower than in population B, so that the cost of schools in population C is 19 per cent lower than that of population A. This decrease is due to the aging of the population as a result of decreased fertility, which more than offsets the rise in the school attendance rate and the drop in the male activity rate.

Furthermore, it can be seen that 1,000 male workers in an under-developed country with high mortality and fertility rates must build approximately one classroom for 30 male pupils every two years and train eight boys teachers every ten years. When the mortality rate declines and expectation of life rises from 30 to 50 years, with an increase in the school attendance rates, 1,000 male workers must build one boys' classroom per year and train ten boys' teachers every ten years. Finally, in an advanced country, in accordance with the demographic revolution, 1,000 male workers need build only one classroom for male pupils every three years and train 3 boys' teachers every ten years. This shows to what extent demographic factors influence the school problem.

TABLE 47. — ANALYSIS OF MALE SCHOOL NEEDS AND AGE STRUCTURE OF THREE STABLE POPULATIONS AT DIFFERENT FERTILITY AND MORTALITY LEVELS AND DIFFERENT MALE ACTIVITY AND SCHOOL ATTENDANCE RATES

Analysis of school needs, and age groups	*Stable population A*	*Stable population B*	*Stable population C*
Male pupils per 1 000 active males . . .	464	618	376
Boys' teachers per 1 000 active males [a]. .	15	21	13
Annual school construction needs per 1 000 active males (unit = construction needs for 1 male pupil):			
Total construction needs	15	27	9
For increase.	10	21	5
For replacement.	5	6	4
Teachers to be trained annually per 1 000 active males [b]	0.75	1.07	0.27
Percentage of the population aged:			
0-14 years	44.7	48.1	29.3
15-64 years	51.9	48.3	57.7
65 years and over	3.4	3.6	13.0

[a] Calculated on the basis of one teacher for thirty pupils.

[b] It has been assumed that a teacher begins his career at the age of 20 and retires at 60. Assuming that, in a stable population, the ratio of teachers to a given number of pupils is constant, the "teacher population" varies at a constant rate (that of the stable population) and its "mortality" rate is invariable. (It is governed by the force of mortality in the stable population and the retirement rate). It is therefore easily demonstrated that the age structure of the teacher population does not vary. In other words, they form a stable population and the rate of entry into it, which is the rate of recruitment of teachers, does not vary and is equal to the sum of the increase and separation rates. If the number of boys' teachers per 1 000 active males (second line of the table) is multiplied by the rate of recruitment, the result is the number of teachers to be trained annually per 1 000 active males.

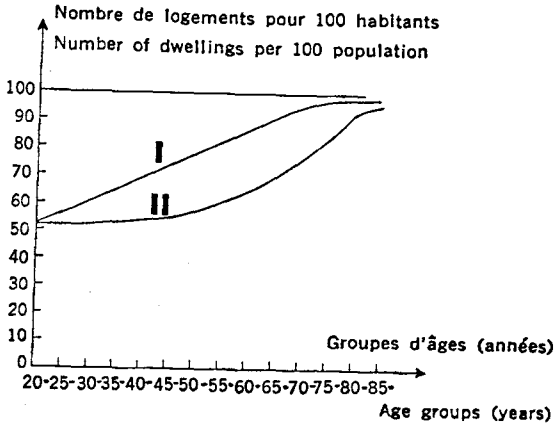
(d) *Housing needs*

A population's attitude to housing needs varies greatly with social customs, particularly with the organization of family life, but it is affected also by many other factors, such as climate, for instance. It may therefore seem artificial to adopt the same behaviour curve for all populations, but that is the only possible solution if the effects of demographic factors are to be isolated. In any case, an approximate curve will answer our needs and we have adopted the following hypothesis: one dwelling per married couple, widow or widower, unmarried people supposedly sharing with one or the other of the foregoing. A nuptiality hypothesis is required also. We have based our calculations on the following hypo-

[29] The school attendance rates of the advanced countries obtained by this method are lower than they are in reality. Many students are counted as active because they carry on some activity while continuing their studies. The method of calculation used excludes them from the school-age population.

theses, which we have already used in chapter II in our study of the effects of variations in fertility and mortality on the number of dependent children per family: the age of the woman at marriage is taken to be 20 years and that of the man 25. It has also been assumed that all possible marriages do in fact take place, i. e., that if there are, for instance, 100 women of 20 years and 90 men of 25, there will be 90 marriages. We are also assuming that there are no divorces. Under these conditions, the number of dwellings required for the inhabitants of a given age-group is found by adding together the numbers of married couples, widows and widowers in that age-group. Graph No. 12 gives the number of dwellings required per 100 inhabitants of each age-group in a stable population with a reproduction rate [30] of 2.0, for two mortality tables, one for a life expectation of 30 years and the other for a life expectation of 70 years. The housing needs increase in the higher age-groups in both cases, because there is an increasing number of widows and widowers; the higher the mortality, the more rapid the increase. Here a new phenomenon appears: the behaviour curve varies with the demographic conditions. In particular, a drop in mortality reduces the housing needs at all ages.

GRAPH 12. — NUMBER OF DWELLINGS PER 100 INHABITANTS OF EACH AGE-GROUP IN TWO STABLE POPULATIONS AT DIFFERENT LEVELS OF MORTALITY (GROSS REPRODUCTION RATE: 2.0)



I. High mortality (expectation of life at birth, 30 years).
II. Low mortality (expectation of life at birth, 70 years).

By applying for each stable population the behaviour curve which corresponds to its mortality, we find the number of dwellings required per 100 inhabitants of all ages and by comparing this figure with that of the male workers, we find the number of dwellings which 1,000 male workers have to maintain. These are the figures in table 48.

A decline in the mortality rate reduces the number of dwellings to be maintained by every 1,000 male workers. This is the result of various movements.

(*a*) A decline in the mortality rate rejuvenates the population at the base, which tends to reduce the cost of housing.

(*b*) A decline in the mortality rate reduces the proportion of active members of the population, which tends to increase the cost.

(*c*) A decline in the mortality rate reduces the number of dwellings required per 100 inhabitants of each age group (graph 12), which tends to reduce the cost.

[30] The average number of dwellings required per 100 inhabitants of a given age, a, is almost unaffected by fertility, as can be shown in the following way : let H_a and F_a be the number of men and women of age a and let V be the proportion of widows of age a per 1 000 women married at the age of 20, and let us take the case where H_{25} is greater than F_{20}. The average number of dwellings required per 100 inhabitants of age a equals:

$$m_a = \frac{H_a + \frac{F_{20}}{H_{25}} V F_a}{H_a + F_a} = \frac{H_a}{H_a + F_a} + \frac{F_{20}}{H_{25}} V \frac{F_a}{H_a + F_a}.$$

If r is the rate of variation of the population, it may be calculated that $\frac{F_{20}}{H_{25}} = e^{5r}k$, when k is governed by mortality alone. The final result therefore is:

$$m_a = \frac{H_a}{H_a + F_a} + e^{5r}k \, V \frac{F_a}{H_a + F_a}.$$

In this equation, only e^{5r} is governed by fertility, but this quantity is always approximately 1 for the values of r which we are considering here.

TABLE 48. — HOUSING REQUIREMENTS[a] PER 1 000 ACTIVE MALES, IN DIFFERENT STABLE POPULATIONS AT DIFFERENT MORTALITY AND FERTILITY LEVELS AND MALE ACTIVITY RATES

Gross reproduction rate	Expectation of life 30 years		Expectation of life 50 years		Expectation of life 70 years	
	Activity rates in under-developed countries	Activity rates in under-developed countries	Activity rates in under-developed countries	Activity rates in developed countries	Activity rates in under-developed countries	Activity rates in developed countries
4.0	795	890	691	783	622	710
3.0	900	994	784	879	701	792
2.0	1 071	1 174	935	1 039	839	939
1.0	1 288	1 422	1 203	1 355	1 096	1 245

[a] The figures have been calculated as follows: (1) age of the woman at marriage, 20 years; age of the man at marriage, 25 years; (2) all possible marriages take place; (3) there must be one dwelling per married couple, widow or widower, the unmarried people supposedly sharing with one or other of these; (4) there are no divorces.

The general effect is a reduction of cost. By producing demographic aging, a decline in fertility increases the number of dwellings to be maintained per 1,000 inhabitants and this effect is partly offset by the increase in the proportion of male workers in the population, which is itself the result of demographic aging.

As in the previous cases, it is necessary to calculate also the number of new dwellings to be built every year to meet the increase in the population and the number of dwellings to be rebuilt. These figures appear in table 49. In this case, the decline in the mortality rate increases the total cost of new construction, and the decline in the fertility rate reduces it.

Table 50 shows how these various movements have combined during the demographic revolution. Taking the three stable populations already used, it shows three levels of economic, social and demographic development. The age structure of the three populations is also given in table 50 *to show how housing needs are linked, ultimately, with the structural aging of the population.*

(e) *Health needs*

Health needs obviously vary with age, on the average more doctors, more medicaments and more hospital beds are required for old people than for adults. Furthermore, not only the number and the length of

TABLE 49. — NUMBER OF DWELLINGS TO BE CONSTRUCTED ANNUALLY [a] PER 1 000 ACTIVE MALES, IN DIFFERENT STABLE POPULATIONS WITH DIFFERENT MORTALITY AND FERTILITY LEVELS AND MALE ACTIVITY RATES

Reproduction rate and housing construction needs	*Expectation of life 30 years*		*Expectation of life 50 years*		*Expectation of life 70 years*	
	Activity rates in under-developed countries	*Activity rates in developed countries*	*Activity rates in under-developed countries*	*Activity rates in developed countries*	*Activity rates in under-developed countries*	*Activity rates in developed countries*
Reproduction rate 4.0						
Total construction needs.	27	31	34	38	36	42
For increase	19	22	27	30	30	35
For replacement . . .	8	9	7	8	6	7
Reproduction rate 3.0						
Total construction needs .	21	23	30	34	34	38
For increase	12	13	22	25	27	30
For replacement . . .	9	10	8	9	7	8
Reproduction rate 2.0						
Total construction needs .	9 [b]	10 [c]	22	24	28	31
For increase	— [b]	— [c]	13	14	20	22
For replacement . . .	— [b]	— [c]	9	10	8	9
Reproduction rate 1.0						
Total construction needs .	— [d]	— [e]	— [f]	— [g]	8 [h]	8 [i]
For increase	— [d]	— [e]	— [f]	— [g]	— [h]	— [i]
For replacement . . .	— [d]	— [e]	— [f]	— [g]	— [h]	— [i]

[a] The calculations have been made on the hypotheses set forth in footnote [a] to table 48. It has further been assumed that it was necessary to replace 1 per cent of the existing dwellings each year, which is tantamount to allowing an average life of 100 years for each dwelling. When the population decreases, a number of dwellings fall vacant each year. The total construction needs are then equal to the difference between the rate of replacement needs and the rate of dwellings falling vacant.

[b] The total construction needs are equal to the difference between the rate of replacement needs (11 per 1 000) and the vacancy rate (2 per 1 000).

[c] The total construction needs are equal to the difference between the rate of replacement needs (10 per 1 000) and the vacancy rate (2 per 1 000).

[d] There are no total needs because the vacancy rate (33 per 1 000) is higher than the rate of replacement needs (13 per 1 000).

[e] There are no total needs because the vacancy rate (37 per 1 000) is higher than the rate of replacement needs (14 per 1 000).

[f] There are no total needs because the vacancy rate (13 per 1 000) is higher than the rate of replacement needs (12 per 1 000).

[g] There are no total needs because the vacancy rate (15 per 1 000) is higher than the rate of replacement needs (14 per 1 000).

[h] The total construction needs are equal to the difference between the rate of replacement needs (11 per 1 000) and the vacancy rate (3 per 1 000).

[i] Total construction needs are equal to the difference between the rate of replacement needs (12 per 1 000) and the vacancy rate (3 per 1 000).

illnesses increase with age, but illnesses are of a different kind. In the younger age-groups, we find mainly epidemic and infectious diseases, while in higher age-groups degenerative diseases predominate. The mortality level itself has an effect on health needs, first and foremost, on the quality of these needs: the kind of hospitals required where mortality is high is not the same as that where mortality is low. In the under-developed countries, the diseases to be overcome are mainly epidemic and infectious, whereas in advanced countries they are mainly degenerative. The mortality level undoubtedly has an effect on the quantity of health needs, too.

Unfortunately, there is very little accurate information from which to form a definite picture of the behaviour of a population with regard to health needs. We do not know the number of hospital beds required per 100 inhabitants of each age-group or the kind of beds required. The same is true of the number doctors, nurses etc. In the material published by the Metropolitan Life Insurance Company, a large insurance company in the United States, we have found a few figures which illustrate the general ideas set out above. Table 51 gives an indication of how the need for hospitals increases with age.

We must emphasize that these figures are of a limited scope. In the first place, they apply to a particular group of people, the policy holders of the Metropolitan Life Insurance Company. Secondly, they refer only to men, and to men over 17 years of age, at that. Finally, the observations are made on the basis of relatively small numbers. These are hospital cases observed among 25,000 men from 17 to 44 years of age, 25,000 men from 45 to 64 years of age and 5,700 men of 60 and over. The figures in table 51 cannot therefore be taken as anything more than an indication of the degree of hospital needs in an advanced country.

TABLE 50. — ANALYSIS OF HOUSING NEEDS PER 1 000 ACTIVE MALES AND AGE STRUCTURE OF THREE STABLE POPULATIONS AT DIFFERENT MORTALITY AND FERTILITY LEVELS AND MALE ACTIVITY RATES

Housing needs and age-groups	*Stable population A*	*Stable population B*	*Stable population C*
Dwellings required per 1 000 active males	847	784	1 092
Dwellings to be constructed annually per 1 000 active males:			
Total needs	24	34	20
For increase	16	26	10
For replacement	8	8	10
Percentage of the population aged:			
0-14 years	44.7	48.0	29.3
15-64 years	51.9	48.4	57.7
65 years and over	3.4	3.6	13.0

Table 52 gives an analysis of the principal reasons for admission to hospital at various ages, for the cases considered in the preceding table. It shows clearly how the type of disease changes with age. The diseases

TABLE 51. — AVERAGE NUMBER OF DAYS IN HOSPITAL PER MAN, BY AGE, FOR MEN INSURED WITH THE METROPOLITAN LIFE INSURANCE COMPANY (UNITED STATES), 1953-1955

Age groups (in years)	*First group of men* [a]	*Second group of men* [b]
17-24	0.7	1.0
25-34		0.6
35-44		0.6
45-54	1.4	1.2
55-64	1.9	1.9
65-69	2.1	
70-74	2.9	
75 and over	4.6	

[a] Cases admitted to hospital between 1 August 1953 and 31 July 1954 and followed up until 1 October 1954 (Metropolitan Life Insurance Company, *Statistical Bulletin*, volume 36, May 1955).

[b] Cases admitted to hospital between 1 August 1953 to 31 July 1955 and followed up until 1 October 1955 (Metropolitan Life Insurance Company, *Statistical Bulletin*, volume 37, February 1956).

fall roughly into three large groups. The first group comprises the diseases of the circulatory system, which become increasingly frequent with age. In the second group we find arthritis and rheumatism, diseases of the central nervous system, diseases of the genito-urinary system and the psychoses. The frequency of these diseases also tends to increase with age, but this trend is less marked than in the case of the diseases of the circulatory system. The third group comprises all the remaining causes. Their frequency tends to diminish with age. We must point out that, owing to the fact that these statistics do not cover young people, a disease such as tuberculosis, for instance, makes scarcely any appearance among the items in our table.

TABLE 52. — PERCENTAGE DISTRIBUTION OF THE PRINCIPAL CAUSES LEADING TO THE ADMISSION TO HOSPITAL OF MEN OF VARYING AGES, INSURED BY THE METROPOLITAN LIFE INSURANCE COMPANY (UNITED STATES), 1953-1955

Principal cause	*Age groups (in years)*		
	17-44 [a]	*45-64* [a]	*60 and over* [b]
Number of cases	998	1 423	445
All causes	100.0	100.0	100.0
Diseases of the circulatory system	9.0	32.4	36.2
Arthritis and rheumatism	1.8	4.3	4.0
Diseases of the central nervous system	4.4	3.9	7.2
Diseases of the genito-urinary system	5.9	4.3	6.7
Psychoses	3.7	3.2	3.8
Accidents	8.2	4.6	4.3
Diseases of the respiratory system	10.9	7.9	6.7
Diseases of the digestive system	31.7	21.3	14.2
Other causes	24.4	18.1	16.9

[a] See footnote [b] to previous table.

[b] See footnote [a] to previous table.

Table 53 gives further data extracted from literature of the Metropolitan Life Insurance Company and illustrates another aspect of the problem.

TABLE 53. — AVERAGE ANNUAL NUMBER OF DAYS OF DISABLING ILLNESS [a] AT VARIOUS AGES AMONG WORKERS INSURED BY THE METROPOLITAN LIFE INSURANCE COMPANY (UNITED STATES), 1953-1955

Sex	Age groups (in years)			
	17-24	25-44	45-59	60-64
Male	3.8	3.2	9.9	27.0
Female . . .	4.3	6.8	15.4	. . .

[a] The calculations have been based on cases of disabling illness beginning between 1 August 1953 and 31 July 1955. They were traced up to 1 October 1955. Only cases of disability lasting eight days or more have been included. The maximum period of disability was fifty-two weeks. (Metropolitan Life Insurance Company, *Statistical Bulletin*, vol. 37, May 1956).

After the age of forty there is a marked increase in the average annual number of days of disabling illness per worker, but, as with the preceding tables, it is essential to bear in mind that the figures relate to a selected and relatively small group of people. The figures can be regarded only as an indication of comparative ratios. These calculations cannot be carried any further in the absence of precise data on changes in health needs in relation to age. All that can be said is that these needs increase with advancing age and at the same time change in character. That being so, the aging of a population by the apex of the pyramid will clearly lead to an increased need for hospitals, and to a greater increase in the number of hospitals treating the diseases of senility than of those treating infectious and epidemic diseases. It should be borne in mind, however, that the curve of needs by age group has been altered by the decline in mortality and that this will raise problems similar to those resulting from population aging. The problem of health needs is therefore a complex one and because of insufficient data cannot be properly studied.

We shall confine ourselves to these examples. We now have a fairly clear idea of how changes in mortality and fertility affect the various needs of a population. Assuming that the problems relating to the production of consumer goods have been solved, we shall now consider the problems relating to the distribution of these goods.

C. THE DISTRIBUTION OF CONSUMER GOODS

The production of consumer goods in sufficient quantity to satisfy automatically the needs of individuals is not enough. There must also be a system of distribution enabling the goods produced to be evenly distributed.

In primitive societies the function of distribution usually devolves on the family. Children are provided with the necessities of life by their parents, and the children when adult support their parents after they are too old to work. Under that system, the head of the family shares what he produces with the young and old people under his authority. Unless there is a change in the family structure, the shares remain approximately the same. They are agreed to once and for all; they are accepted unhesitatingly and cause no difficulties. If, however, the family structure alters as a result of variations in demographic factors or changes in customs, difficulties may arise. For example, if the head of a family has to set aside an increasingly large proportion of his produce to support the young and old members of his family, he may react in any one of a number of ways. Generally speaking, he will accept the obligation to support the children, but in the case of old people he may be less willing.

Changes in the family structure as a result of variations in demographic factors correspond to the changes produced by these variations on the age structure of the population. It has been pointed out that a decline in mortality rejuvenates the age structure of the pyramid from below. The symptom of that phenomenon in the family is a larger number of children to be supported. The decline in mortality, as has been seen, has little effect on the apex of the pyramid. At the family level that means that although more people live beyond the age when they stop working and continue to live for a longer time after that age, this situation is offset by the larger number of adults who live to support them. The decline in fertility leads to an older age-structure both at the base and the apex of the pyramid. At the family level that means that there are fewer children to be supported but also proportionately fewer adults to support the aged. It is as if part of the produce which was hitherto reserved for the children had to be transferred for the benefit of the aged.

1. *Uniform family participation*

Let us consider in greater detail how population trends affect the burden of supporting old persons within the family. For that purpose we shall postulate a model family so as to simplify the calculation. The characteristics of this model are set out in the footnote to table 54.

This table shows the distribution of 1,000 families considered at the time when the children become responsible for the support of their parents. [31]

(*a*) According to the number of surviving children;

(*b*) According to the number of surviving parents.

Owing to the high mortality rate of the first population, the situation at the time when the surviving children undertake the support of their parents is that a high proportion of families do not need to undertake any responsibility, i. e., both parents are dead (more than one-third). In the majority of cases (approximately half the families)

[31] To simplify the calculation, the same mortality rate has been postulated for both men and women, and the model mortality tables calculated for the male sex have been used.

If p is the probability of survival to age 30 for a new-born child, the distribution of families according to the number of children surviving at the time when the children become responsible for the support of their parents is given by the expansion of $(p + q)^n$ where n is the number of live-born children per family and $q = 1 - p$.

Equally if h is the probability of survival to age 60 for a person aged 30, the distribution of families according to the number of surviving parents at the time when the children become responsible for the support of their parents is given by the expansion of $(h + k)^2$ where $k = 1 - h$.

TABLE 54. — SYSTEM OF UNIFORM FAMILY PARTICIPATION: DISTRIBUTION OF 1 000 FAMILIES AT THE TIME WHEN THE SURVIVING CHILDREN BECOME RESPONSIBLE FOR THE SUPPORT OF THEIR PARENTS, ACCORDING TO: (A) THE NUMBER OF SURVIVING CHILDREN AND (B) THE NUMBER OF SURVIVING PARENTS, IN THREE MODEL POPULATIONS HAVING DIFFERENT FERTILITY AND MORTALITY LEVELS [a]

Family attributes	*Population I*	*Population II*	*Population III*
Total number of families. . .	1 000	1 000	1 000
(A) Number of children surviving when the surviving children become responsible for the support of their parents :			
6	11	665	
5	72	282	
4	209	45	
3	318	5	814
2	254	2	174
1	114	1	12
0	22	0	0
(B) Number of parents surviving when the surviving children become responsible for the support of their parents :			
2	169	709	
1	484	260	
0	347	25	

[a] The calculation has been based on the following assumptions: (*a*) the parents are of the same age; (*b*) they stop working at age 60; (*c*) all the children are born when the parents are aged 30. The demographic situation of the three model populations is as follows:

Population I. 6 live-born children per family, expectation of life at birth 30 years;

Population II. 6 live-born children per family, expectation of life at birth 70 years;

Population III. 3 live-born children per family, expectation of life at birth 70 years.

the family supports one parent only. Only a very few families have to support two parents.

In other words, under the system of family participation considered here, the result of the decline in mortality is that more families became responsible for supporting their parents. The decline in fertility is seen to have no effect in this regard.

Let us now consider the situation with regard to the support of parents at the time when this support is undertaken. The length of time during which the parents are supported is another aspect of the matter and will be considered later.

Table 54 shows that where the mortality rate and the fertility rate are both high, families with two, three or four surviving children are the most frequent and that when they become responsible for the support of parents, there is usually only one parent still alive.

Where the mortality rate is low and the fertility rate high, families with five or six children are the most frequent, but there are then usually two parents to support. The share of responsibility for each child at the time the support is undertaken is thus more or less the same as in the preceding case. The operation of the compensating factors is quite apparent, for although more old persons survive, there are more children to provide for their needs.

Where the mortality rate and the fertility rate are both low, families with two or three children are the most frequent, and, as in the previous case, these families usually have two parents to support. The burden on each child at the time when the support of the parents is undertaken is thus about twice as heavy as in the two preceding cases. In other words, the effect of the decline in fertility is to double the burden on each child.

A consideration of the average size of families further clarifies these results. Table 55 shows the average number of surviving children and of surviving parents per family at the time when the children become responsible for the support of their parents. The ratio between the two gives the average burden per child at the time when the responsibility is undertaken. This ratio, expressed in terms of 1,000 children, appears in the third line of the table.

TABLE 55. — SYSTEM OF UNIFORM FAMILY PARTICIPATION: AVERAGE SIZE OF FAMILIES AT THE TIME THE CHILDREN UNDERTAKE THE SUPPORT OF THEIR PARENTS IN THREE MODEL POPULATIONS HAVING DIFFERENT FERTILITY AND MORTALITY LEVELS [a]

Average size	*Population I*	*Population II*	*Population III*
Average number of surviving children per family	2.84	5.60	2.80
Average number of surviving parents per family.	0.82	1.68	1.68
Number of surviving parents per 1 000 surviving children.	289	301	601

[a] See footnote to table 54.

The other aspect of the question, the length of time during which the burden is borne, will now be considered.

With respect to population I, the 289 parents will have to be supported by the 1,000 children during a period equal on an average to the expectation of life at age 60 (E_{60}). The 1,000 children of age 30 will, between 30 and 60 years of age, live on the average for a specified number of years (E_{30}^{60}). The average number of years during which a parent of age 60 or over has to be supported for each year lived by the children between ages 30 and 60 is equal to 289 E_{60}/E_{30}^{60}. This figure gives a measure of the total burden to be borne by the survivors among the 1,000 children.

Table 56 gives the figures resulting from these calculations in the case of the three model populations in question.

In the models considered here, persons aged 60 or over are supported by persons aged 30 to 59. Hence the ratio between the number of persons aged 60 or over and the number of persons aged 30 to 59 in a stable population corresponding to the demographic situation adopted for the models should be identical with the figures in the last line of table 56.

In the series of stable populations used in this study, the following three populations may be said to correspond to the three demographic situations of the three models:

1. Stable population calculated with a gross reproduc-

TABLE 56. — SYSTEM OF UNIFORM FAMILY PARTICIPATION: FIGURES REPRESENTING THE AVERAGE BURDEN OF SUPPORTING AGED PARENTS IN THREE MODEL POPULATIONS HAVING DIFFERENT MORTALITY AND FERTILITY LEVELS [a]

Factors in the calculation	*Population I*	*Population II*	*Population III*
(*a*) Parents surviving to age 60 for every 1,000 children surviving to age 30	289	301	601
(*b*) Expectation of life at age 60 (in years) (E_{60}).	10.6	16.7	16.7
(*c*) Average number of years lived by children between ages 30 and 60 (E^{60}_{30}). . .	21.8	28.5	28.5
(*d*) Average number of years during which a parent aged 60 or over must be supported for each year lived by the children between ages 30 and 60 $\left(\frac{a \times b}{c}\right)$	0.14	0.18	0.36

[a] See footnote to table 54.

tion rate of 3.0 [32] and a mortality rate corresponding to the model table giving a life expectation at birth of 30 years;

2. Stable population calculated with a gross reproduction rate of 3.0 [32] and a mortality rate corresponding to the model table giving a life expectation at birth of 70 years;

3. Stable population calculated with a gross reproduction rate of 1.5 [32] and a mortality rate corresponding to the model table giving a life expectation at birth of 70 years.

For these three populations, the ratio of persons aged 60 or over to persons aged 30 to 59 is respectively 0.14, 0.18 and 0.36. These proportions tally very well with those appearing in the last line of table 56.

2. *System of support of parents by the eldest child*

Under the system of family participation considered above, all the children share the burden of supporting the aged. This arrangement is usually found where a very wide meaning attaches to the notion of the family as, for example, where the parents and all the children, including the married ones, live together. It is also found in societies where the family is understood in a narrower sense in cases where, for example, the aged parents live with each of their children in turn. There are, however, other systems of family participation. Sometimes the eldest child supports the parents in return for some particular benefit such, for example, as the management of the family farm. Under this system, if the eldest child dies, his place is taken by the brother or sister next to him in age. The application of this system of participation to the three preceding models is carried out in table 57, which shows for every 1,000 children aged 30:

(*a*) The number of eldest children who undertake the support of their parents and the age at which they do so;

(*b*) The average period during which a parent is supported. [33]

The meaning of the figures in table 57 is as follows. In population I (high mortality rate and high fertility rate), when the parents reach the age of 60 and the children the age of 30, i. e., when the children undertake the support of their parents, there are 229 surviving eldest children out of every 1,000 children, and they alone are responsible for the support of the parents. During the five ensuing years the brother or sister next in age will have to replace fourteen of the eldest children in supporting the parents because these eldest children will have died and the parents whom they were supporting will still be alive.

During the following five-year period, twelve children will have to be replaced, and so on until the parents are all dead. Attention is drawn to the total number of children who have to support their parents, the figures for which are to be found on the line for "Total number of eldest children".

TABLE 57. — SYSTEM OF SUPPORT OF PARENTS BY THE ELDEST CHILD: ELDEST CHILDREN UNDERTAKING THE SUPPORT OF PARENTS AT VARIOUS AGES, OUT OF 1,000 CHILDREN OF AGE 30, IN THREE MODEL POPULATIONS HAVING DIFFERENT MORTALITY AND FERTILITY LEVELS [a]

Age when support is undertaken (in years)	*Population I*	*Population II*	*Population III*
Total number of eldest children.	268	183	366
30.	229	174	348
30-34	14	1	2
35-39	12	2	4
40-44	8	2	4
45-49	4	1	2
50-54	1	2	4
55-59	0	1	2
Average period during which a parent is supported (in years)	11.3	27.9	27.9

[a] See footnote to table 54.

The proportion of children who have to support their parents decreases with a decline in mortality (compare populations I and II) but increases with a decline in fertility (compare populations II and III). The figures on the last line of table 57 give a measure of the burden borne by the eldest children. A decline in fertility does not affect that burden. On the other hand, a decline in mortality has a marked effect, for it multiplies the burden by two and a half times.

Under the system of family participation here consi-

[32] Assuming that out of every 100 births there are 49 girls and 51 boys, a gross reproduction rate of 3.0 corresponds to 6.06 children per woman and a gross reproduction rate of 1.5 corresponds to 3.03 children per woman. These figures are slightly higher than those for the size of families in the three models.

[33] In making this calculation, the period of support where there are two dependent parents has been reckoned as twice what it is where there is only one.

dered, variations in the demographic factors are thus seen to produce different effects than under the previous system. It consequently becomes clear that the consequences of population trends depend on the system that is adopted.

If the average period during which a parent is supported (figure on the last line of stable 57) is multiplied by the number of eldest children who support their parents, the result is the total burden represented by the parents. If this total burden is related to the average number of years lived by the children between ages 30 and 60 (value of E_{30}^{60} in table 57), the burden calculated by using the age structure of the populations will appear.

3. *System of collective participation*

The method of family participation, whatever type is practised, changes with the passage of time. As far as the children are concerned, society usually provides for their educational needs, and in some countries the recent introduction of family allowances has decreased the importance of the family in the distribution of consumer goods. As far as the aged are concerned, the system of family participation tends to disappear completely with the advance of economic development and, in particular, of urbanization. Old persons, and adults generally, tend to lead their own lives independently of other persons. Some means must accordingly be found to persuade the adults that a part of their production should be set aside for the support of the aged. That is the system of superannuation funds. Many variations of this system can be envisaged. The simplest is the so-called participation system, in which sums paid into the fund during a year are used to pay the retirement pensions for that year. Let S be the average wage of an adult, A the number of paying members, E the number of children, V the number of old people, p the contribution, i. e., the percentage of wages paid into the fund by the members so as to defray the cost of the pensions, q the value of the retirement pension expressed as a percentage of wages. These quantities are obviously linked by the relationship $pSA = qSV$, hence $p = q\,V/A$. If retirement pensions were equal to wages, the contributions to the fund would be identical with the ratio between old people and workers. Retirement pensions, however, are never equal to wages, for S in the present instance represents a worker's total production, i. e., what is needed to support not only himself but also the young and the aged. As a worker thus uses only part of his production for himself, to make the retirement pension equal to S would mean that the aged would receive for their personal needs far more than the workers. To adopt $q = 0.7$, in accordance with the scale of needs previously used, would be erroneous, since the figure of 0.7 was calculated on the basis of a comparison of individuals needs. In other words, it is the ratio which the proportion of total production allocated to the aged bears to the proportion allocated to adults. Hence the total wages SA should be divided proportionately to 0.7E, A and 0.7V, which gives:
For the total number of aged persons:

$$\frac{0.7V}{0.7E + A + 0.7V}\,SA;$$

For the total number of children:

$$\frac{O.7E}{0.7E + A + 0.7V}\,SA;$$

For the total number of adults:

$$\frac{A}{0.7E + A + 0.7V}\,SA.$$

This last quantity represents the total net wages. The proportion of the gross wage allocated to the aged is obtained by dividing the portion of total wages that is allocated to the aged by SA, whence

$$p = \frac{0.7V}{0.7E + A + 0.7V}.$$

The value of the retirement pension expressed as a proportion of the gross wage is obtained by dividing the portion of total wages that is allocated to the aged by VS, whence

$$q = \frac{0.7A}{0.7E + A + 0.7V}.$$

This contribution p has been calculated for the various stable populations so far used. The calculation, the results of which are given in table 58, part A, has been confined to the male population, and the figures for gainful employment previously used for developed and under-developed countries have been used. Children (E) are represented by the non-working population aged 0 to 24 years, and old people (V) drawing retirement benefits are represented by the non-working population of aged 25 years and over. [34] The working population is represented by the males not coming within either of the two preceding groups.

The table gives further support to the conclusions already reached concerning the effect on the age structure of variations in the demographic factors. A decline in mortality has little effect on the contribution, whereas a decline in fertility, which leads to an aging of the pyramid by the apex, causes the contribution to increase. Further, the greater number of males in gainful employment in developed countries as compared with under-developed countries also has the effect of increasing the contribution.

According to this system, the fraction of wages representing the retirement pension is not fixed but depends on demographic conditions; it is shown in table 59 for the various populations considered. A somewhat different system, under which the retirement pension is fixed once and for all in relation to the gross wage, is frequently preferred. The first might be called the system of uniform collective participation, and the second the system of collective participation on a fixed pension basis. In the second system, a retirement pension fixed at 50 per cent of the gross wage is usually adopted. Table 59 shows that this percentage is slightly too high for populations with high fertility and slightly too low for populations

[34] Retirement benefits actually do not begin until much after age 25. Nevertheless, the adjustment in the figures that would have to be made in order to take the retirement age into account would be of little importance since there are relatively few non-working young adults.

TABLE 58. — CONTRIBUTION (PERCENTAGE OF WAGES) TO THE RETIREMENT FUND UNDER TWO SYSTEMS OF COLLECTIVE PARTICIPATION, IN VARIOUS STABLE POPULATIONS HAVING DIFFERENT MORTALITY AND FERTILITY LEVELS AND DIFFERENT MALE ACTIVITY RATES [a]

System of participation and gross reproduction rate	Expectation of life: 30 years		Expectation of life: 50 years		Expectation of life: 70 years	
	Activity rates of under-developed countries	Activity rates of developed countries	Activity rates of in under-developed countries	Activity rates of developed countries	Activity rates of in under-developed countries	Activity rates of developed countries
A. — *Uniform collective participation*						
4.0	1.2	1.7	1.2	1.7	1.2	1.3
3.0	1.5	2.2	1.5	2.5	1.5	2.0
2.0	2.3	3.8	2.4	4.2	2.5	3.7
1.0	4.0	7.8	4.7	9.4	5.1	8.9
B. — *Collective participation on a fixed pension basis (50 per cent of gross wage)*						
4.0	1.5	2.2	1.5	2.3	1.5	2.3
3.0	1.7	2.6	1.7	3.1	1.7	3.1
2.0	2.2	3.9	2.3	4.6	2.6	4.9
1.0	3.4	7.2	4.1	9.0	4.6	9.7

[a] The calculation concerns the male population only. Persons in receipt of a retirement pension are assumed to comprise the non-working population of age 25 or over, and "children" are represented by the non-working population of age 25 or less. It is assumed that the needs of a non-working person (child or pensioner) are equal to 70 per cent of the needs of a working person. Although non-working young adults are not in fact usually in receipt of retirement benefits, there are relatively few such persons and to take them into account would hardly alter the results.

with low fertility. The result is that under the influence of changes in demographic conditions the contribution varies less under the second system than under the first. The contribution paid under the second system is indicated in table 58, part B.

4. *System of life annuities by capitalization*

The system of collective participation has been introduced only recently in some countries. It is easy to see why, for under that system there is no personal link between the aged persons who receive retirement pensions and the workers who pay the contributions. There are, in fact, two groups of persons who are unknown to each other: those who pay and those who receive. Such anonymity is psychologically difficult to accept. Consequently the systems which originally replaced the system of family participation were based on an entirely different principle, according to which each person pays for his own retirement.

There are a number of possible variants. One of these is the system of life annuities by capitalization. Instead of the accounts being balanced by calendar year, they are balanced by generation, i. e., for a group of persons born in the same year. The survivors of each generation pay into the retirement fund each year a fraction of their wages which is credited to the generation's account. The sums paid into the account are invested, and the interest on these investments is also credited to the gene-

TABLE 59. — RETIREMENT PENSION, EXPRESSED AS A PERCENTAGE OF THE GROSS WAGE, UNDER A SYSTEM OF UNIFORM COLLECTIVE PARTICIPATION, IN VARIOUS STABLE POPULATIONS HAVING DIFFERENT MORTALITY AND FERTILITY LEVELS AND DIFFERENT MALE ACTIVITY RATES [a]

Gross reproduction rate	Expectation of life: 30 years		Expectation of life: 50 years		Expectation of life: 70 years	
	Activity rates of under-developed countries	Activity rates of developed countries	Activity rates of under-developed countries	Activity rates of developed countries	Activity rates of under-developed countries	Activity rates of developed countries
4.0	42.4	38.6	40.2	36.2	38.4	34.4
3.0	46.7	42.8	44.2	40.3	42.7	38.6
2.0	51.6	48.0	49.8	45.8	48.2	44.0
1.0	58.7	54.4	57.3	52.3	56.1	50.6

[a] See footnote to table 58.

ration's account. After a certain age, the surviving members of the generation stop working, and the sum credited to the generation's account is used to pay each of them a retirement pension. If the interest rate on the investment and the relationship between the amount of the wages and the amount of the retirement pension are known, the contribution can be so calculated that the sum standing to the credit of the generation will be zero by the time the last representative of that generation dies. The four main bookkeeping items in such a system would then be as follows:

1. Receipts of the fund in form of workers' contributions;

2. Receipts in the form of interest paid on the fund's investments. As this interest is incorporated in the prices of consumer goods, it ultimately represents an indirect charge on wages;

3. Expenditure of the fund corresponding to the payment of retirement pensions;

4. Investment of the surplus of the total receipts over the total expenditure represented by the payment of retirement pensions.

The portion of wages represented by these four items has been calculated for the various stable populations of males. In order to simplify the calculation, it has been assumed that:

(*a*) Everyone began working at age 20 and stopped working at age 60;

(*b*) Everyone received the same wage during his working life;

(*c*) The retirement pension paid at age 60 was equal to half the wage;

(*d*) The interest rate on the money invested was 2 per cent.

The results of the calculation appear in table 60.

Under such a system, the effects of variations in the demographic factors are very different according to whether they are considered from the worker's or the fund's point of wiew.

To take first the worker's point of view, all that he is aware of is the contribution he pays into the fund. As has already been stated, the amount he pays into the fund through interest rates is incorporated in prices and is therefore made unknowingly. Since the direct contribution is determined by a calculation that is based on the longevity of a generation, it is clearly dependent on the mortality rate alone and increases when the mortality rate declines. It is not affected by a decline in the fertility rate. It will be noticed that the results are exactly the contrary of those observed under the system of collective participation but correspond to some extent with those observed in connexion with the second system of family participation dealt with above.

To take next the fund's point a view, a decline in mortality increases its receipts, both those deducted from wages and those derived indirectly through interest on investments. The retirement pensions paid will of course be the same whatever system is used. Here it has been assumed that the retirement pension will be equal to half the wage, the retirement pensions paid being equal to the contribution paid by a worker under a system of collective participation on a fixed pension

TABLE 60. — RECEIPTS AND EXPENDITURE OF THE RETIREMENT FUND, EXPRESSED AS PERCENTAGES OF TOTAL WAGES, UNDER A SYSTEM OF LIFE ANNUITIES BY CAPITALIZATION, IN VARIOUS STABLE POPULATIONS HAVING DIFFERENT MORTALITY AND FERTILITY LEVELS [a]

Gross reproduction rate and financial operations of the fund	*Expectation of life at birth (in years)*		
	30	*50*	*70*
Reproduction rate 4.0			
Direct contributions by workers	3.6	7.0	9.8
Income from investments (interest)	2.2	3.5	4.3
Total receipts	5.8	10.5	14.1
Retirement pensions paid	3.1	3.6	3.7
Surplus receipts (investments by the fund)	2.7	6.9	10.4
Reproduction rate 3.0			
Direct contributions by workers	3.6	7.0	9.8
Income from investments (interest)	2.0	4.0	5.2
Total receipts	5.6	11.0	15.0
Retirement pensions paid	4.2	5.2	5.1
Surplus receipts (investments by the fund)	1.4	5.8	9.9
Reproduction rate 2.0			
Direct contributions by workers	3.6	7.0	9.8
Income from investments (interest)	3.2	4.9	5.5
Total receipts	6.8	11.9	15.3
Retirement pensions paid	6.9	8.4	8.9
Surplus receipts (investments by the fund)	No surplus	3.5	6.4
Reproduction rate 1.0			
Direct contributions by workers	3.6	7.0	9.8
Income from investments (interest)	4.8	7.3	9.2
Total receipts	8.4	14.3	19.0
Retirement pensions paid	14.5	18.3	19.7
Surplus receipts (investments by the fund)	No surplus	No surplus	No surplus

[a] In making this calculation it was assumed that:

(*a*) Everyone began working at age 20 and stopped working at age 60;

(*b*) Everyone received the same wage during his working life;

(*c*) The retirement pension paid at age 60 was equal to half the wage;

(*d*) The interest rate on the money invested was 2 per cent.

The calculation relates only to males.

basis. [35] A decline in mortality leads to a slight increase in the retirement benefits paid, but as this is less than the increase in total receipts, the net result is that the decline in mortality brings about an increase of receipts over expenditure. Thus when mortality declines, the fund is able to invest more heavily.

A decline in fertility does not affect direct receipts but, as the calculation shows, leads to an increase in the indirect receipts obtained from interest on investments. The total receipts consequently increase, but since the retirement pensions paid also increase, and more rapidly than the total receipts, the surplus of total receipts over expenditure eventually declines. In other words, when fertility declines the fund has less and less money to invest.

In comparing the system of collective participation with the system of life annuities by capitalization, a distinction must be made between the point of view of the worker and the point of view of the fund.

As stated above, the retirement pensions paid are, in table 60, equal to contribution paid by a worker under a system of collective participation on a fixed pension basis. [36] Where, therefore, the direct contribution is lower than the retirement pension paid, the worker regards the system of retirement pensions through participation as less advantageous than the system of life annuities. The gross reproduction rate below which the system of life annuities is more advantageous to the worker is, for three levels of mortality, as follows:

	Expectation of life at birth (in years)		
	30	*50*	*70*
Gross reproduction rate. . .	3.55	2.44	1.92

It is evident that the system of life annuities is the more advantageous in proportion as fertility is low and mortality is high. If, however, the total contribution, including the indirect contribution, is considered, [37] the system of life annuities is in the last analysis nearly always disadvantageous to the worker. It becomes less and less so as as fertility falls and mortality rises. It is advantageous only where the mortality rate is very high and the fertility rate very low, i. e., in demographic conditions which hardly ever exist in practice. As already stated, however, it is not the total contribution which must be considered, for the total contribution has no psychological reality for the worker, and thus from the psychological point of view the system of life annuities has distinct advantages. A stable currency is, however, essential to its functioning, and that is no doubt one of the reasons why it has been discontinued by a number of countries and in particular by most of the European countries.

From the point of view of the retirement fund, the chief difference between the two systems is the effect of the retirement fund on the capital market under the system of life annuities. That effect is greatest when mortality is low and fertility high—conditions which in practice are obviously contradictory—but it is still very substantial with medium levels of mortality and fertility.

The similarities and the differences between the two systems become clearer in the light of the problems previously considered in connexion with the three populations chosen to illustrate the three stages of population development.

In the first case (stable population A) the worker pays the same contribution under either system. [38] Where mortality declines while fertility remains constant (first stage in the demographic revolution), the system of life annuities becomes less advantageous than the other system, and the disadvantage becomes more pronounced as the mortality rate continues to decline. If fertility in its turn declines, the situation is progressively reversed, and in a population with low fertility and low mortality (population C) the system of life annuities is the more advantageous. Actually, however, the total contribution under the system of life annuities is always higher than the retirement benefits paid, i. e., it is higher than the contribution under a system of collective participation on a fixed pension basis. The gap between the total contribution and the retirement pensions paid increases in the first stage and decreases in the second. In stable population C the total contributions are roughly equal to the retirement benefit paid.

TABLE 61.— RECEIPTS AND DISBURSEMENTS OF THE RETIREMENT FUND, IN PERCENTAGES OF TOTAL WAGES UNDER A SYSTEM OF LIFE ANNUITIES BY CAPITALIZATION, [a] IN STABLE POPULATIONS CORRESPONDING TO THREE STAGES OF POPULATION DEVELOPMENT [b]

	Stable population A	*Stable population B*	*Stable population C*
Direct contributions by workers	3.6	7.0	9.9
Income from investments (interest).	2.1	3.8	4.8
TOTAL RECEIPTS.	5.7	10.8	14.6
Retirement pensions paid . .	3.6	4.4	14.3
Surplus receipts (investment by the fund)	2.1	6.4	0.3
Percentage of the population in three main age-groups:			
Aged 0-14 years	44.7	48.1	29.3
Aged 15-59 years	51.9	48.3	57.7
Aged 60 years and over . .	3.4	3.6	13.0

[a] See footnote to table 60.

[b] *Stable population A:* gross reproduction rate 3.5; expectation of life at birth 30 years.

Stable population B: gross reproduction rate 3.5; expectation of life at birth 50 years.

Stable population C: gross reproduction rate 1.5; expectation of life at birth 70 years.

[35] The figures here are different from those in table 58 because the ages of beginning and stopping work are not the same as those used in calculating the figures in that table.

[36] Where the retirement pension is fixed at 50 per cent of the gross wage.

[37] This total contribution is equal to the total receipts of the fund.

[38] The direct contribution is equal to the retirement pensions paid.

In stable population A, the fund's investments are far from negligible (2.1 per cent of total wages), and they increase greatly during the first stage. In population B they represent 6,5 per cent of total wages, but during the second stage they become gradually smaller and in population C have virtually disappeared. The age structure of populations A, B and C in table 61 shows the connexion between these various factors and the aging of populations.

Many other systems for financing retirement pensions are possible, and in fact many other systems are in existence. For example, instead of life annuities there are retirement benefits which can be bequeathed to descendants and which are then usually described as income. Since, however, the calculations in such cases can easily become complicated, the choice in the present instance has been confined to relatively simple examples.

5. *Summary of the relationship between aging and distribution problems*

The consequences of the aging of populations are now seen more clearly. The non-working population consists by definition of non-productive consumers. It lives on the goods placed at its disposal by the working members of the population. Transfers therefore take place between the working population and the non-working groups, i. e., the young and the aged. It has been seen that the number of persons in each of these non-working groups is often affected by certain compensating factors which tend to minimize the consequences of population aging. In a prosperous economy, for example, operating according to the formula "to each according to his needs", the effects of these compensating factors on the number of persons in each group would not lead to difficulties as regards problems of satisfaction and transfer. Under a general system of accounting, goods would be distributed in exactly the same way to both old and young. That is not so in practice, since the *nature* of the transfer is fundamentally different according to the group which benefits by it. An identification of the two non-working groups, although possible in terms of calories or unit-needs, thus loses some of its meaning, and the numerical compensations resulting from the seesaw movement on either side of the middle groups become purely nominal.

The various stages of economic development, in as far as the support of the non-working population is concerned, may be roughly distinguished as follows: [39]

1. The "agricultural economy", in which both the young and the aged are maintained within the family framework;

2. The capitalist stage, in which the young people continue to be supported by the family but the aged live increasingly on their savings;

3. The "social" stage, in which the aged are taken care of by the community in accordance with the budgetary or semi-budgetary methods underlying systems of social security. There is a tendency in this case for the system of pensions through participation to replace the traditional system of capitalization.

Throughout the course of this development the support of the young has continued for the most part to be provided by the family, even in countries like France and the United Kingdom, where there are relatively large family allowances, or the Soviet Union, where collective expenditure for the young is largely socialized.

Aging therefore brings about a change in the very nature of the transfers by the working members of the population to the non-working groups. The general trend has been an increasing substitution of social contributions for the burdens freely accepted within the framework of the family. Hence in a population that has aged the support of the non-working members becomes more difficult because it is less readily accepted. The psychological effects of this change in the nature of economic transfers are among the most important consequences of the process of aging.

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[39] A. Sauvy, *L'Europe et sa population*, Paris, 1953, pp. 77 *et seq.*

Chapter IV

AGING OF POPULATIONS: FUTURE TRENDS

The first chapter of this volume contained an analysis of the trends revealed in the past in the age composition of various populations. In that chapter it was shown that the phenomenon of aging has, in general, affected only the populations of the economically developed countries, whereas the under-developed countries, which still cover most of the surface of the earth and include the greater part of the world's population, have on the whole maintained a comparatively "young" age-structure.

It would seem, then, that any study of the future trends of aging should be focused on two important questions: first, whether the process of aging is likely to continue among the economically advanced and already comparatively "aged" populations; and, secondly, whether that process is likely to extend to the populations which are at present characterized by high mortality and fertility levels and by a comparatively "young" age-structure.

The problems and difficulties encountered in the present analysis are essentially the same as those involved in any ordinary population projection, but the emphasis will be put here on the resulting age-structure and, in particular, on the changing numbers and proportions of old people in a given population rather than on the total size of the population in question and its rate of growth. We shall thus in this chapter give our attention primarily to aging at the apex of the age pyramid. This is usually accompanied and always preceded by a relative increase in the proportion of "older adults" to "younger adults", that is, by the phenomenon usually referred to as "the aging of the labour force".[1]

In order that we may answer the two questions put above we shall briefly consider the likely course of future fertility and mortality trends in populations characterized at present by low mortality and fertility levels and in those where both mortality and fertility are still high. In each case, the discussion of future trends will be followed by an analysis of their effects on the age composition of the populations in question, and by way of illustration we shall borrow examples from recent demographic literature. Migration, which may also appreciably influence the future age-composition, will be left out of the analysis for two reasons. First, because prediction of the future number of migrants by age is too difficult, and, secondly, because the incidence of this factor varies enormously from country to country, so that no generalized assumptions are possible.

[1] See chapter I.

A. Populations characterized by low mortality and fertility levels

1. *Future mortality and fertility trends*

In the countries where mortality is at present low, mortality rates at all ages have considerably declined during the last hundred years. This decline in mortality was not, however, spread uniformly through all ages but affected the younger age-group much more than the others. In fact, the proportion of survivors in the younger age-groups had increased by the middle of this century in most of the Western countries to such an extent that even a complete elimination of deaths in these age-groups would not materially affect the number of survivors.

The situation is different with respect to the other age-groups, where there is still room for much improvement. There are, moreover, grounds for optimism with regard to future mortality trends among older persons. It seems, for instance, that the possibilities of anti-biotics, to which the post-war decline in mortality among older persons has been mainly attributed, have not yet been fully exhausted. At the same time, some progress has recently been made in the diagnosis of such degenerative diseases affecting mainly the old, as cancer and diseases of the heart, and in the treatment of *diabetes mellitus*. It must be remembered, moreover, that the old people of tomorrow will belong to generations that will have lived in better economic and sanitary conditions than the old people of today and that they will, on the whole, probably be healthier. Finally, the phenomenon of the aging of populations has in itself stimulated interest in the social and medical care of the aged, and society's increasing concern with the well-being of the aged may contribute to the lengthening of many lives.

As the decline in mortality will in future be more marked for the old than for the young, its effect will be to increase the expectation of life at higher ages, and that will automatically increase the aging of populations at the apex of the age pyramid.

Future fertility trends are not easy to predict. The continuous decline in fertility rates noted in the Western countries over a period varying from about fifty to more than a hundred years came to a stop shortly before the Second World War. For several years after the war there was even a sharp increase in the annual number of births. Opinions differ as to whether the "baby-boom" recorded after 1940 was due to an intrinsic change in reproductive behaviour or simply to short-term fluctuations explainable

in terms of an abnormal concentration of marriages and the spacing of births.

The downward trend in fertility seems to have been associated with the spread of birth control. To the extent to which this practice becomes more widespread, fertility may be expected to decline even further. Furthermore, methods of birth control have not yet been perfected and, as is shown by a number of surveys in various countries, the number of "unwanted" children is still considerable. Wider application of improved contraceptive measures may thus lead to a further reduction in the size of families. Various other demographic factors also work in the same direction.

What matters in the long run, however, is the attitude of parents towards family size. This attitude is likely to be affected by a multitude of considerations, such as the present and future economic situation, the cost of education, the status of women and so on. Although the available evidence indicates that on the whole reproductive behaviour is not at present undergoing any substantial change, it is clearly impossible to predict future trends with any accuracy. In the circumstances the best that can be done is to evaluate the effect of the fertility factor on the future age-structure in the light of various assumptions concerning the average size of families in the future.

As to the effect of the changing fertility pattern on the age-structure, a careful distinction must be drawn between the short- and long-term situation as well as between the effect on the absolute numbers of persons in various age-groups and their relative distribution. For instance, an increase in the number of annual births has the immediate effect of raising the proportion of children and therefore tends, other things being equal, to lower the proportion of the aged. At the same time the numbers of the aged remain, of course, unaffected. On the other hand, the long-term consequences of an increase in the annual flow of births depend on how long the trend continues. If it is only temporary, then it may result, after a period of sixty years or so, in an increase in the relative numbers of the aged, since the number of survivals at ages, say above sixty-five, is to a large extent a function of the number of births more than sixty-five years before.

2. *Age-structure trends*

The age-structure of a population has been compared to a mirror in which the past trends in the main components of population growth are reflected. It may be said that both the present and the future age-composition of a given population are explainable in terms of past fertility, mortality and migration trends. Since, however, the population will in the not too distant future consist to a large extent of the survivors of the present generations (the proportion diminishing with time), it is convenient and instructive to think of the current age-distribution as one of the determinants of the subsequent pattern.

As a result of their demographic history, the age pattern of the populations characterized at present by low fertility and mortality levels has tended to assume the shape of a barrel rather than a pyramid, this being an indication that there are relatively more middle-aged than young persons in such a population. As time goes on, the bulge will move up the scale, and there will be an increase in the number of the aged. These short-term effects will in fact be comparatively little affected by the future mortality and fertility levels. In the long run, on the other hand, when the survivors of the present young generations reach old age, a decline in the numbers of the aged can be expected. Whether this decline in numbers will be accompanied by a reduction in the proportion of the aged depends, of course, on the fertility and mortality rates in the intervening period.

3. *Example of Great Britain*

For the illustration of future trends in aging among populations characterized by low mortality and fertility, the projections prepared by the Royal Commission on Population for the period 1947 to 2047 [2] have been chosen. Out of sixteen combinations of assumptions presented by the Commission, the following four have been selected for the present analysis:

Projection	*Mortality*	*Fertility*	*Migration*
10	Declining	Low (falling)	Nil
8	Declining	Medium (5 % above 1935-1938)	Nil
11	Declining	High (rising)	Nil
6	Constant at 1942-1944 level	Medium (5 % above 1935-1938)	Nil

The descriptions of fertility levels given in parentheses refer to the terminology employed in the Commission's report with regard to fertility assumptions. These assumptions are based on fertility rates specific for duration of marriage. For methodological details, reference is made to the *Papers of the Royal Commission on Population* (vol. II). [2]

The hypothesis of declining mortality assumes that the age-specific death rates will decline from 1947 to 1977 in accordance with the trends recorded over the past fifty years, after which the level of mortality will remain constant. In that event there would be an increase in the expectation of life at birth from 62.7 years in 1942-44 to 69.0 in 1978 for males and from 67.4 to 76.2 year for females. It is important here to note that a rather moderate decline in the mortality rates for the older ages was postulated in the projections. Should the expectation of life at older ages increase more substantially—and it was suggested before that this is likely to happen—then the extent of aging will be more pronounced than is indicated by the projections.

The relative age-distribution of the projected populations by three broad age-groups is shown in table 62. In addition, the trends among that portion of the population aged sixty-five years and over is illustrated in figure 13. It thus appears that over the next hundred

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[2] *Papers of the Royal Commission on Population*, vol. II. *Reports and Selected Papers of the Statistics Committee.* London, Her Majesty's Stationery Office, 1950, pp. 213 *et seq.*

years the variation in the proportion of the aged will pass through the following five stages:

(*a*) During the next twenty years or so, the proportion of the aged will increase from about 10 per cent in 1947 to about 13-14 per cent in 1967, irrespective of assumptions as to future mortality and fertility. This short-term effect is in accordance with the previously foreseen effect of the "current" age-structure. Under any assumption the upward-moving bulge of the age pyramid will cause an increase in both the number and the proportion of the aged.

(*b*) In the period 1967 to 1987, the upward trend will continue, but the range of variation will widen according to fertility and mortality assumption. It is interesting to note that even if a "rising" fertility is postulated, the proportion of the aged will further increase from about 13 per cent in 1976 to about 16 per cent in 1987. A similar increase takes place on the hypothesis of constant mortality. The effect of the current age-structure will thus continue to be strong and to act in the same direction.

(*c*) During the following twenty years (1987 to 2007), the aging process will come to a halt. In fact, according to all the assumptions, except that of declining fertility, the proportion of the aged may even slightly decrease. This is the period during which the dent caused at the base of the age pyramid by the past decline in fertility will have moved to the apex of the pyramid and offset the aging effects of fertility and mortality in the intervening period.

(*d*) Between the years 2007 and 2017, a rather steep but short-lived jump in the proportion of the aged is oreseen. This is the period during which the persons born in the "fertile" years between 1942 and 1952 will have reached or passed the age of sixty-five. The "baby-boom" of the past will thus have caused some increase in the proportion of the aged.

(*e*) By 2017 the effects of the 1947 age-composition will have worn off, so that the subsequent trend will be solely the outcome of the postulated fertility and mortality conditions during the preceding decades.

There is no doubt that, during the next fifty years or so, the population of Great Britain will experience further aging. During this period the proportion of persons aged sixty-five years or over can be expected to increase from about 10 per cent to about 15-17 per cent. The present age-structure will be a very important factor in this development.

With the passage of time the effects of the present age-composition will gradually taper off, so that the trend in the first half of the twenty-first century will depend mainly on future fertility and mortality levels. If, as foreseen in assumption A, there is a decline in fertility, the proportion of the aged will in the period 2012-47 oscillate around the high figure of 21 per cent. On the other hand, very little aging will take place if present family-building habits do not change radically.

It seems on the whole that the effect of the mortality factor on future aging will be small, but it must be borne in mind that a relatively small drop in mortality at the older ages is envisaged.

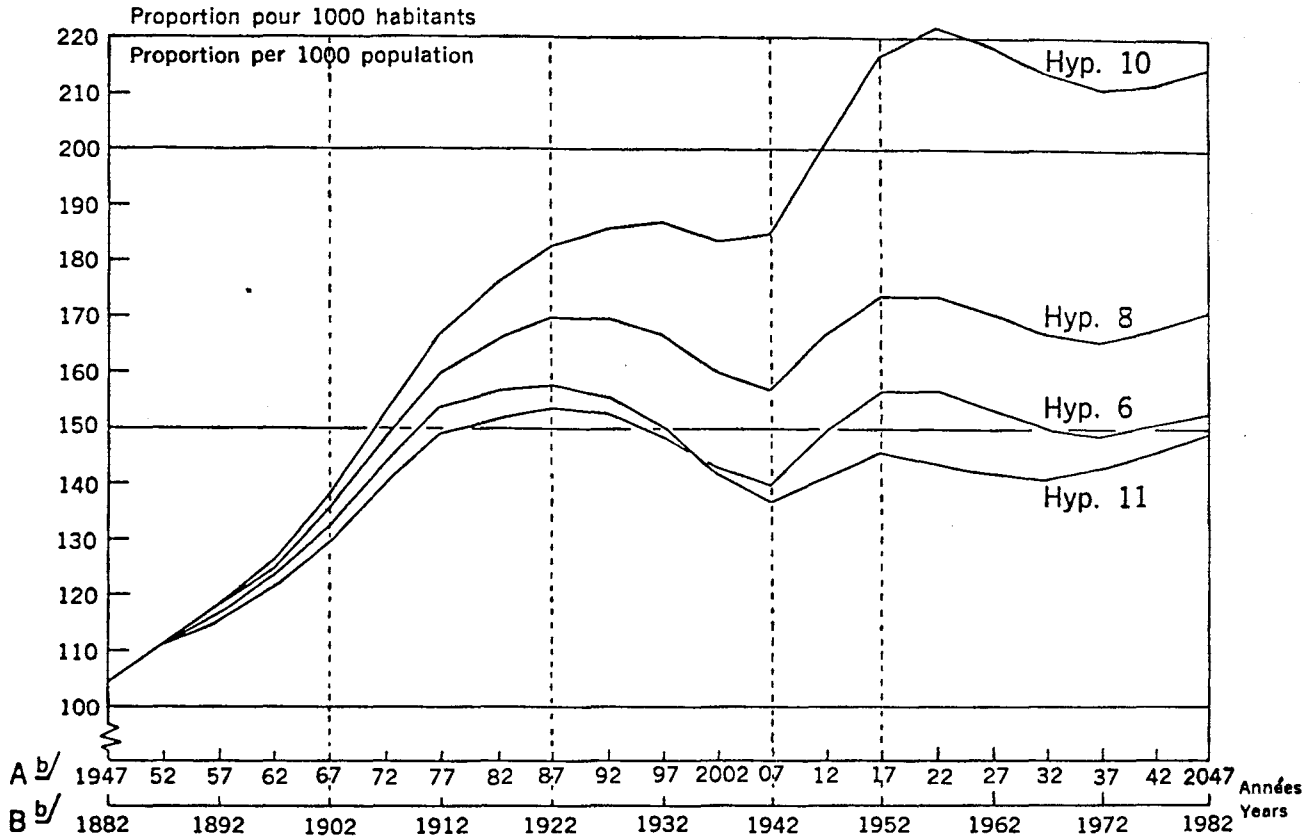
Owing to the overriding importance of the age structure and the fact that a barrel-shaped age pattern is a common characteristic of the population in the "Western culture" area, there is perhaps good reason for regarding the

TABLE 62. — RELATIVE DISTRIBUTION OF THE POPULATION OF GREAT BRITAIN, 1947 TO 2047, BY THREE AGE-GROUPS ON THE BASIS OF FOUR PROJECTIONS OF THE ROYAL COMMISSION ON POPULATION

Projections	*Age-group (in years)*	*1947*	*1957*	*1967*	*1977*	*1987*	*1997*	*2007*	*2017*	*2027*	*2037*	*2047*
Projection 10 (declining mortality, low fertility)	All ages	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
	0-14	214	221	180	168	167	157	152	152	150	150	150
	15-64	682	661	682	665	651	656	662	631	630	639	635
	65 and over	104	118	138	167	183	187	185	217	219	211	215
Projection 8 (declining mortality, medium fertility)	All ages	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
	0-14	214	223	194	194	197	192	191	192	191	191	191
	15-64	682	659	670	646	633	642	651	634	638	643	638
	65 and over	104	118	136	160	170	167	157	174	171	166	171
Projection 11 (declining mortality, high fertility)	All ages	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
	0-14	214	226	208	218	224	219	220	219	215	213	211
	15-64	682	657	659	628	618	630	643	635	643	645	640
	65 and over	104	117	133	154	158	151	137	146	142	143	149
Projection 6 (constant mortality, medium fertility)	All ages	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
	0-14	214	223	194	195	199	194	194	195	194	194	194
	15-64	682	661	675	656	647	657	666	648	653	657	653
	65 and over	104	116	130	149	154	149	140	157	154	149	153

Source: Papers of the Royal Commission on Population, vol. II. *Reports and Selected Papers of the Statistics Committee.* London, Her Majesty's Stationery Office, 1950, pp. 213 *et seq.*

GRAPH 13. — FUTURE TREND OF THE PROPORTION OF PERSONS AGED 65 YEARS AND OVER IN GREAT BRITAIN ON THE BASIS OF VARIOUS ASSUMPTIONS [a]



[a] Projection 10 (declining mortality, low fertility);
Projection 8 (declining mortality, medium fertility);
Projection 11 (declining mortality, high fertility);
Projection 6 (constant mortality, medium fertility).

[b] Scale B shows the date of birth of persons who reach the age of sixty-five during the year shown on scale A.

population situation of Great Britain as applicable to other countries of this area. Barring a spectacular increase in the fertility rates, it can be said with certainty that further aging will take place among these populations at least during the next few decades.

B. COUNTRIES WITH HIGH MORTALITY AND HIGH FERTILITY

1. *Future mortality and fertility trends*

Even where data on past trends of the components of population growth are available, the estimation of future size and age-distribution is difficult. The absence of data only adds to the difficulty, and that is the case with the areas of high fertility and high mortality, i. e., populations which are in the initial stage of demographic development. Most of the world population is still in this category.

Nevertheless, the task of predicting in broad terms the future course of population movement in these areas is perhaps less speculative than would appear at first glance. It may reasonably be assumed, though opinions may differ on this point, that these populations will generally follow the trend, often referred to as "demographic transition", which the more advanced countries have already established.

There is accordingly every reason to expect an early decline in mortality in many areas which are as yet underdeveloped.

On the other hand, it is rather unlikely that the reduction in death rates will immediately be accompanied by a *substantial* decline in the birth rates. Yet *some* decline in fertility may be expected in the not too distant future, if only because birth-control methods are becoming more and more widely known. [3]

L. T. Badenhorst's projections of the Bantu population of the Union of South Africa, [4] which are given below,

[3] For a more detailed discussion of the arguments for and against a demographic development in under-developed countries similar to the past development of the European population, reference is made to *The Determinants and Consequences of Population Trends*, United Nations publication, Sales No.: 1953.XIII.3; and *The Population of Central America (including Mexico), 1950-1980*, United Nations publication, Sales No.: 1954.XIII.3.

[4] L. T. Badenhorst, "The future growth of the population of South Africa and its probable age distribution", *Population Studies*, vol. IV, No. 1, June 1950.

illustrate the consequences with regard to aging where a population is assumed to undergo a period of declining mortality, followed by a period of declining fertility. Another typical illustration, which also takes into account the possibility of fertility remaining constant at a high level is provided by the projections recently prepared by the United Nations Secretariat on the populations of Central America. [5]

2. *The Bantu population of the Union of South Africa*

Badenhorst postulated that the Bantu population [6] would experience a gradually declining mortality during the period 1946 to 1980, so that by the end of that period the mortality would reach the levels indicated in the life table for Asiatics of the Union of South Africa [7] in 1940-1942 (expectation of life at birth: 52.9 years for males and 54.1 for females). [8] With regard to fertility, Badenhorst assumed that the general fertility rate (total births per 1 000 women aged 15-49) would remain constant at 160.0 during the period 1946 to 1965. After that date it was assumed that the rate would drop by 5 per cent per quinquennium until 1980.

The resulting changes in the age composition of the Bantu population in 1950, 1965 and 1980 are shown in table 63. It will be seen that the proportion of the aged will increase only very slightly from 3.4 per cent in 1950 to 4.6 per cent in 1980.

[5] *Future Population Estimates by Sex and Age: I. The Population of Central America (including Mexico), 1950-1980*, United Nations publication, Sales No.: 1954.XIII.3.

[6] Pure-blooded aboriginals. The main tribes are: Zulu, Basuto, Xosa, Pondo, Barolong, Shangaan, Fingo, Mashona and Bechuana.

[7] Natives of Asia and their descendants, almost all Indian.

[8] It was assumed that the current mortality was at the level indicated by the life table for the Coloureds in 1935-1937 (expectation of life at birth: 40.17 years for males and 40.85 for females).

TABLE 63. — AGE DISTRIBUTION OF THE BANTU POPULATION OF THE UNION OF SOUTH AFRICA IN 1950, 1965 AND 1980, ACCORDING TO BADENHORST'S PROJECTION A

Age group (in years)	*Percentage distribution*			*Absolute figures*			*Percentage increase 1950-1980*
	1950	*1965*	*1980*	*1950*	*1965*	*1980*	
All ages	100.0	100.0	100.0	8 304.4	10 977.6	14 552.2	75.2
0-14	38.1	38.3	36.4	3 152.5	4 198.8	5 292.8	67.4
15-39	40.5	39.1	39.4	3 366.7	4 297.5	5 717.0	69.8
40-64	18.0	18.5	19.6	1 494.1	2 030.4	2 864.9	91.7
65 and over . .	3.4	4.1	4.6	281.1	450.9	677.5	141.0

Source: L. T. Badenhorst, "The future growth of the population of South Africa and its probable age distribution", *Population Studies*, vol. IV, No. 1, June 1950.

Although no appreciable aging can be expected, a trend towards aging is nevertheless discernible from a comparison of the percentage increase for the various age-groups (last column of table 63). The Bantu population as a whole would increase by about 75 per cent in the course of the thirty-year period. At the same time the number of children and "young adults" would increase by less than 70 per cent, whereas the number of "older adults" and of the aged would increase by 90 and 140 per cent respectively.

3. *Central America (including Mexico)*

The projections of future population in Central America, which also cover the period 1950-1980, are based on the assumption that there will be a rather steep decline in mortality so that by 1975-1980 the expectation of life at birth in most of the countries concerned will have reached the level of about 65 years. With regard to fertility, three sets of assumptions were made: I. Maintenance of birth rates at the present high level;

TABLE 64. — PROPORTION OF PERSONS AGED SIXTY-FIVE YEARS AND OVER TO TOTAL POPULATION IN CENTRAL AMERICA (INCLUDING MEXICO), 1950 TO 1980, ON THE BASIS OF PROJECTIONS MADE BY THE UNITED NATIONS SECRETARIAT[a]

Fertility assumption	*Proportion of persons aged 65 and over to total population*				*Percentage increase, 1950-1980*	
	1950	*1960*	*1970*	*1980*	*Total population*	*Persons aged 65 and over*
I. "High"	2.89	2.92	3.27	3.33	149.6	188.1
II. "Medium" . . .	2.89	2.99	3.52	3.87	115.1	188.1
III. "Low"	2.89	3.07	3.77	4.44	87.2	188.1

[a] For methods used, see: *Future Population Estimates by Sex and Age: I. The Population of Central America (including Mexico), 1950-1980.*

II. Gradually declining rates; [III. Rapidly declining rates.

Table 64 summarizes the trends, on the basis of these projections, in the proportion of persons aged sixty-five years and over for the whole region. It will be seen that the proportion of the aged will increase very slowly from 2.89 per cent in 1950 to 3.33 per cent in 1980, if fertility is assumed to remain at high level. At the other extreme, the low fertility level would cause a more significant increase from 2.89 to 4.44 per cent. Although such changes in age structure are not very great, it is interesting to note that, as in the case of the Bantu population, the number of the aged will, irrespective of the assumption adopted, increase at a faster rate than the population as a whole. Should fertility decline as in assumption III, the number of the aged will be nearly tripled, while the total population will be less than doubled.

C. Summary of conclusions

In summarizing our conclusions, the first step is to go back to the two questions raised at the beginning of this chapter. The first question was whether it is reasonable to expect a continuation of the aging process among populations which are both economically and demographically advanced. The answer seems to be in the affirmative. The aging process will continue, not only because mortality at the older ages will probably show a further decline, but also because of the present age-structure of these populations.

With regard to the under-developed countries, the prediction of trends is more difficult. In the light of the material considered in this paper, it would seem that the age-structure of populations in the under-developed countries is not likely to undergo any appreciable change in the next generation. The proportion of old persons will, in particular, increase very slightly, and by 1980 the extent of aging among the populations of those areas will not be any greater than among the populations of the more developed countries at the beginning of this century. The aging process seems, however, to have begun, and although accurate forecasting is difficult, this trend will likely become accelerated in the more distant future. Even if the broad pattern of "demographic transition" is accepted, the scope and the time of occurrence of the processes involved are unpredictable, so that any attempt at foreseeing their consequences is largely a matter of more or less intelligent guess-work.

APPENDIX

Tables I and II : see pocket at the end of volume

ANNEXE

Tableaux I et II : Voir pochette à la fin du volume

Table III. Distributions of populations by age groups and sex for selected dates (absolute figures and distribution per cent of total population)

Tableau III. Population par groupes d'âges et par sexe, à diverses époques (nombres absolus et répartition en pourcentage de la population totale)

1. EGYPT

1. ÉGYPTE

Age (in years) (en années)	*Male — Masculin*				
	1907	*1917*	*1927*	*1937*	*1947*
	Numbers in 000's — Nombres en milliers				
0- 4	866.8	858.4	994.5	1 021.9	1 279.6
5- 9	796.8	905.0	937.4	1 107.9	1 208.9
10-14	671.4	1 401.9	860.5	1 030.9	1.142.3
15-19	528.7		680.1	713.2	983.9
20-24	816.5	938.6	522.7	539.7	677.8
25-29			573.5	616.7	685.7
30-34	739.4	849.5	494.3	557.9	620.1
35-39			493.4	600.4	659.3
40-44	509.4	572.5	378.0	474.8	569.1
45-49			284.0	345.1	428.5
50-54	687.6	375.1	270.6	330.3	421.2
55-59			120.8	144.7	171.1
60-64		228.6	244.6	201.7	252.0
65-69			120.4	72.3	83.8
70-74		138.5		100.9	107.8
75-79				26.9	23.4
80-84		75.9	65.0	39.0	34.8
85 & +				24.3	17.3
All ages — Tous âges	5 616.6	6 344.0	7 039.8	7 948.6	9 366.6
	Percentages — Pourcentages				
0- 4	15.43	13.53	14.12	12.86	13.67
5- 9	14.18	14.26	13.31	13.94	12.91
10-14	11.95	22.10	12.22	12.97	12.20
15-19	9.41		9.66	8.97	10.51
20-24	14.53	14.79	7.42	6.79	7.24
25-29			8.14	7.76	7.32
30-34	13.16	13.39	7.02	7.02	6.62
35-39			7.01	7.55	7.04
40-44	9.07	9.02	5.37	5.97	6.08
45-49			4.03	4.34	4.58
50-54	12.24	5.91	3.84	4.16	4.50
55-59			1.72	1.82	1.83
60-64		3.60	3.47	2.54	2.69
65-69			1.71	0.91	0.89
70-74		2.18		1.27	1.15
75-79				0.34	0.25
80-84		1.20	0.92	0.49	0.37
85 & +				0.31	0.18
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	41.56	...	39.65	39.77	38.78
15-44	...	...	44.62	44.06	44.81
45-64	...	...	13.06	12.86	13.60
65 & +	...	...	2.63	3.32	2.84
All ages — Tous âges	100.0	...	100.0	100.0	100.0

Table III (*continued*)

1. EGYPT (*continued*)

Tableau III (*suite*)

1. ÉGYPTE (*suite*)

Age (in years) (en années)	*Female — Féminin*				
	1907	*1917*	*1927*	*1937*	*1947*
	Numbers in 000's — Nombres en milliers				
0- 4	909.6	895.8	1 037.0	1 085.7	1 305.3
5- 9	768.6	897.1	922.0	1.101.0	1 191.2
10-14	523.3	1 178.8	719.4	878.2	1 071.2
15-19	418.6		614.7	633.1	917.4
20-24	918.2	1 040.4	577.3	565.2	706.1
25-29			652.6	692.9	786.5
30-34	757.2	873.2	571.1	634.5	689.5
35-39			442.5	540.6	653.6
40-44	514.9	569.7	411.6	472.2	566.3
45-49			242.9	313.2	415.2
50-54	762.7	376.9	303.1	335.5	448.5
55-59			106.4	134.3	173.1
60-64		262.4	274.3	231.3	298.8
65-69			138.0	72.8	82.1
70-74		141.4		122.1	136.7
75-79				28.9	24.0
80-84		98.2	86.7	58.6	52.6
85 & +				34.8	23.5
All ages — Tous âges	5 573.1	6 333.9	7 099.6	7 934.9	9 541.5
	Percentages — Pourcentages				
0- 4	16.32	14.14	14.60	13.68	13.68
5- 9	13.79	14.17	12.98	13.87	12.48
10-14	9.39	18.62	10.13	11.07	11.22
15-19	7.51		8.65	7.98	9.61
20-24	16.47	16.42	8.13	7.12	7.40
25-29			9.19	8.73	8.24
30-34	13.58	13.79	8.04	7.99	7.23
35-39			6.23	6.81	6.85
40-44	9.24	9.00	5.80	5.95	5.93
45-49			3.42	3.95	4.35
50-54	13.68	5.95	4.27	4.23	4.70
55-59			1.50	1.69	1.81
60-64		4.14	3.86	2.91	3.13
65-69			1.94	0.92	0.86
70-74		2.23		1.54	1.43
75-79				0.36	0.25
80-84		1.55	1.22	0.74	0.55
85 & +				0.44	0.25
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	39.50	...	37.71	38.62	37.38
15-44	...	...	46.04	44.58	45.23
45-64	...	...	13.05	12.78	13.99
65 & +	...	...	3.16	4.00	3.34
All ages — Tous âges	100.0	...	100.0	100.0	100.0

Table III (*continued*)

1. EGYPT (*concluded*)

Tableau III (*suite*)

1. ÉGYPTE (*fin*)

Age (In years) (en années)	*Both sexes — Les deux sexes*				
	1907	*1917*	*1927*	*1937*	*1947*
	Numbers in 000's — Nombres en milliers				
0- 4	1 776.4	1 754.2	2 031.5	2 107.6	2 584.8
5- 9	1 565.4	1 802.1	1 859.4	2 208.9	2 400.1
10-14	1 194.7	2 580.7	1 579.9	1.909.1	2 213.5
15-19	947.3		1 294.8	1 346.3	1 901.4
20-24	1 734.7	1 979.0	1 100.0	1 104.9	1 383.8
25-29			1 226.1	1 309.6	1 472.3
30-34	1 496.6	1 722.7	1 065.4	1 192.4	1 309.6
35-39			935.9	1 141.0	1 313.0
40-44	1 024.3	1 142.2	789.6	947.0	1 135.4
45-49			526.9	658.3	843.7
50-54		752.0	573.7	665.8	869.7
55-59			227.2	279.0	344.2
60-64		491.0	518.9	433.0	550.8
65-69	1 450.3		258.4	145.1	165.9
70-74		279.9		223.0	244.5
75-79				55.8	47.5
80-84		174.1	151.7	97.6	87.5
85 & +				59.1	40.8
All ages — Tous âges	11 189.7	12 677.9	14 139.4	15 883.5	18 908.5
	Percentages — Pourcentages				
0- 4	15.88	13.83	14.37	13.27	13.67
5- 9	13.99	14.21	13.15	13.91	12.69
10-14	10.68	20.35	11.17	12.02	11.71
15-19	8.47		9.16	8.48	10.05
20-24	15.51	15.61	7.78	6.96	7.32
25-29			8.67	8.25	7.78
30-34	13.38	13.59	7.53	7.51	6.93
35-39			6.62	7.18	6.94
40-44	9.15	9.01	5.58	5.96	6.00
45-49			3.73	4.15	4.46
50-54		5.93	4.06	4.19	4.60
55-59			1.61	1.76	1.82
60-64		3.87	3.67	2.73	2.91
65-69	12.96		1.83	0.91	0.88
70-74		2.21		1.40	1.29
75-79				0.35	0.25
80-84		1.37	1.07	0.61	0.46
85 & +				0.37	0.22
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	40.55	...	38.69	39.20	38.07
15-44	...	...	45.34	44.34	45.02
45-64	...	...	13.07	12.83	13.79
65 & +	...	...	2.90	3.64	3.10
All ages — Tous âges	100.0	...	100.0	100.0	100.0

Sources : 1907-1937 : Institut national d'études démographiques, *Le mouvement naturel de la population dans le monde de 1906 à 1936*, 1954.

1947 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

2. CANADA

Tableau III (*suite*)

2. CANADA

Age (in years) (en années)	*Male — Masculin*					
	1901	*1911*	*1921*	*1931*	*1941*	*1951*
	Numbers in 000's — Nombres en milliers					
0- 4	324.3	448.2	533.5	543.1	532.8	877.1
5- 9	311.1	395.0	528.7	572.5	528.1	712.5
10-14	295.7	354.9	461.3	542.9	555.5	574.1
15-19	280.3	351.2	403.3	525.3	564.5	531.2
20-24	257.0	385.9	351.0	463.7	517.1	535.9
25-29	216.3	370.5	347.6	410.0	487.4	551.2
30-34	188.1	310.3	343.3	368.1	430.7	511.2
35-39	172.6	257.9	342.3	359.1	395.7	502.5
40-44	152.0	213.0	286.5	347.8	348.0	444.9
45-49	125.6	178.7	236.9	321.5	332.0	386.9
50-54	106.1	152.7	195.1	267.3	315.4	339.9
55-59	82.1	113.0	148.1	199.2	274.9	292.2
60-64	72.8	94.3	126.4	156.9	218.2	263.9
65-69	54.5	67.6	90.6	120.7	162.2	227.8
70-74	39.1	47.8	60.6	88.6	110.9	160.2
75-79	24.5	30.3	35.6	50.0	67.1	94.0
80-84	13.1	15.6	18.1	23.9	34.0	45.9
85 & + . . .	6.6	8.4	9.4	11.3	15.9	22.7
All ages — Tous âges .	2 721.8	3 795.3	4 518.3	5 371.9	5 890.4	7 074.1
	Percentages — Pourcentages					
0- 4	11.92	11.81	11.81	10.11	9.05	12.40
5- 9	11.43	10.41	11.70	10.66	8.96	10.07
10-14	10.87	9.35	10.21	10.11	9.43	8.12
15-19	10.30	9.25	8.92	9.78	9.58	7.51
20-24	9.44	10.17	7.77	8.63	8.78	7.58
25-29	7.95	9.76	7.69	7.63	8.28	7.79
30-34	6.91	8.18	7.60	6.85	7.31	7.23
35-39	6.34	6.80	7.57	6.69	6.72	7.10
40-44	5.58	5.61	6.34	6.47	5.91	6.29
45-49	4.61	4.71	5.24	5.98	5.64	5.47
50-54	3.90	4.02	4.32	4.98	5.35	4.80
55-59	3.02	2.98	3.28	3.71	4.67	4.13
60-64	2.67	2.48	2.80	2.92	3.70	3.73
65-69	2.00	1.78	2.01	2.25	2.75	3.22
70-74	1.44	1.26	1.34	1.65	1.88	2.26
75-79	0.90	0.80	0.79	0.93	1.14	1.33
80-84	0.48	0.41	0.40	0.44	0.58	0.65
85 & + . . .	0.24	0.22	0.21	0.21	0.27	0.32
All ages — Tous âges .	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14	34.22	31.57	33.72	30.88	27.44	30.59
15-44	46.52	49.77	45.89	46.05	46.58	43.50
45-64	14.20	14.19	15.64	17.59	19.36	18.13
65 & + . . .	5.06	4.47	4.75	5.48	6.62	7.78
All ages — Tous âges .	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

2. CANADA (*continued*)

Tableau III (*suite*)

2. CANADA (*suite*)

Age (In years) (en années)	Female — Féminin					
	1901	1911	1921	1931	1941	1951
	Numbers in 000's — Nombres en milliers					
0- 4	318.7	439.1	524.2	531.2	516.9	841.2
5- 9	304.8	388.2	520.1	560.2	515.8	682.7
10-14	284.7	345.4	451.8	531.1	543.8	554.7
15-19	272.2	329.1	398.6	514.3	554.2	524.9
20-24	251.8	320.4	360.2	447.5	513.8	550.2
25-29	207.1	287.7	338.9	376.3	478.0	577.3
30-34	174.9	244.8	309.6	340.7	411.7	529.3
35-39	158.7	209.9	290.1	329.4	362.7	494.8
40-44	137.8	176.6	240.7	298.3	327.6	422.2
45-49	113.6	152.8	198.1	263.7	302.4	356.6
50-54	97.9	132.4	166.8	221.3	275.6	321.9
55-59	78.5	100.1	132.2	167.9	231.5	277.9
60-64	68.2	83.8	112.9	137.7	188.4	241.7
65-69	51.2	63.5	81.4	110.4	145.1	205.3
70-74	37.3	46.2	56.9	83.0	105.9	154.6
75-79	23.2	29.3	35.8	48.6	68.5	94.2
80-84	12.7	15.9	19.5	25.3	37.4	50.8
85 & +	7.1	9.3	11.3	14.2	19.8	29.8
All ages — Tous âges	2 600.4	3 374.6	4 249.1	5 001.1	5 599.1	6 910.1
	Percentages — Pourcentages					
0- 4	12.26	13.01	12.34	10.62	9.23	12.17
5- 9	11.72	11.50	12.24	11.20	9.21	9.88
10-14	10.95	10.24	10.63	10.62	9.71	8.03
15-19	10.47	9.75	9.38	10.28	9.90	7.60
20-24	9.68	9.49	8.48	8.95	9.18	7.96
25-29	7.97	8.53	7.97	7.53	8.54	8.35
30-34	6.73	7.25	7.29	6.81	7.35	7.66
35-39	6.10	6.22	6.83	6.59	6.48	7.16
40-44	5.30	5.24	5.66	5.96	5.85	6.11
45-49	4.37	4.53	4.66	5.27	5.40	5.16
50-54	3.76	3.92	3.92	4.43	4.92	4.66
55-59	3.02	2.97	3.11	3.36	4.14	4.02
60-64	2.62	2.48	2.66	2.75	3.37	3.50
65-69	1.97	1.88	1.92	2.21	2.59	2.97
70-74	1.43	1.37	1.34	1.66	1.89	2.24
75-79	0.89	0.87	0.84	0.97	1.22	1.36
80-84	0.49	0.47	0.46	0.51	0.67	0.74
85 & +	0.27	0.28	0.27	0.28	0.35	0.43
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14	34.93	34.75	35.21	32.44	28.15	30.08
15-44	46.25	46.48	45.61	46.12	47.30	44.84
45-64	13.77	13.90	14.35	15.81	17.83	17.34
65 & +	5.05	4.87	4.83	5.63	6.72	7.74
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*) **Tableau III** (*suite*)

2. CANADA (*concluded*) 2. CANADA (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*					
	1901	*1911*	*1921*	*1931*	*1941*	*1951*
	Numbers in 000's — Nombres en milliers					
0- 4	643.0	887.3	1 057.7	1 074.3	1 049.8	1 718.3
5- 9	615.9	783.3	1 048.8	1 132.7	1 043.9	1 395.2
10-14	580.3	700.3	913.1	1 074.0	1 099.3	1 128.8
15-19	552.5	680.4	801.9	1 039.6	1 118.7	1 056.1
20-24	508.8	706.3	711.2	911.2	1 031.0	1 086.1
25-29	423.4	658.2	686.5	786.3	965.4	1 128.6
30-34	363.1	555.1	652.9	708.8	842.4	1 040.5
35-39	331.2	467.8	632.4	688.5	758.3	997.3
40-44	289.9	389.7	527.2	646.1	675.6	867.1
45-49	239.2	331.5	435.0	585.2	634.4	743.5
50-54	204.0	285.1	361.9	488.6	591.0	661.8
55-59	160.7	213.0	280.3	367.1	506.3	570.1
60-64	141.0	178.1	239.3	294.6	406.6	505.6
65-69	105.7	131.0	172.0	231,1	307.3	433.1
70-74	76.4	94.0	117.5	171.6	216.8	314.8
75-79	47.8	59.5	71.4	98.6	135.6	188.2
80-84	25.8	31.5	37.6	49.2	71.4	96.7
85 & + . . .	13.7	17.6	20.7	25.5	35.7	52.5
All ages — Tous âges .	5 322.4	7 169.8	8 767.4	10 373.0	11 489.5	13 984.3
	Percentages — Pourcentages					
0- 4	12.08	12.38	12.07	10.36	9.14	12.29
5- 9	11.57	10.92	11.96	10.92	9.09	9.98
10-14	10.90	9.77	10.41	10.35	9.57	8.07
15-19	10.38	9.49	9.15	10.02	9.74	7.55
20-24	9.56	9.85	8.11	8.78	8.97	7.77
25-29	7.96	9.18	7.83	7.58	8.40	8.07
30-34	6.82	7.74	7.45	6.83	7.33	7.44
35-39	6.22	6.52	7.21	6.64	6.60	7.13
40-44	5.45	5.44	6.01	6.23	5.88	6.20
45-49	4.49	4.62	4.96	5.64	5.52	5.32
50-54	3.83	3.98	4.13	4.71	5.14	4.73
55-59	3.02	2.97	3.20	3.54	4.41	4.08
60-64	2.65	2.48	2.73	2.84	3.54	3.61
65-69	1.99	1.83	1.96	2.23	2.67	3.10
70-74	1.44	1.31	1.34	1.66	1.89	2.25
75-79	0.90	0.83	0.81	0.95	1.18	1.34
80-84	0.48	0.44	0.43	0.47	0.62	0.69
85 & + . . .	0.26	0.25	0.24	0.25	0.31	0.38
All ages — Tous âges .	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14	34.55	33.07	34.44	31.63	27.80	30.34
15.44	46.39	48.22	45.76	46.08	46.92	44.16
45.64	13.99	14.05	15.02	16.73	18.61	17.74
65 & + . . .	5.07	4.66	4.78	5.56	6.67	7.76
All ages — Tous âges .	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1901, 1911 : Institut international de statistique, *Annuaire international de statistique*, vol. I (1916), III (1919) et V (1921).

1921, 1931 : *Le mouvement naturel...*

1941, 1951 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

3. UNITED STATES

Tableau III (*suite*)

3. ÉTATS-UNIS

Age (in years) (en années)	*Male — Masculin*					
	1900	*1910*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers					
0- 4	4 633.7	5 380.6	5 857.4	5 806.2	5 354.8	8 236.1
5- 9	4 479.4	4 924.1	5 753.0	6 381.1	5 418.8	6 714.6
10-14	4 083.0	4 601.8	5 369.3	6 068.8	5 952.3	5 660.4
15-19	3 750.5	4 527.3	4 673.8	5 757.8	6 180.2	5 311.3
20-24	3 624.6	4 580.3	4 527.0	5 336.8	5 692.4	5 606.3
25-29	3 323.5	4 244.3	4 538.2	4 860.2	5 450.7	5 972.1
30-34	2 901.3	3 656.8	4 130.8	4 561.8	5 070.3	5 624.6
35-39	2 616.9	3 367.0	4 074.4	4 679.9	4 745.7	5 517.5
40-44	2 255.9	2 786.4	3 285.5	4 136.5	4 419.1	5 070.3
45-49	1 837.8	2 378.9	3 117.6	3 671.9	4 209.3	4 526.4
50-54	1 564.6	2 110.0	2 535.5	3 131.6	3 752.8	4 128.6
55-59	1 145.3	1 488.4	1 880.1	2 426.0	3 011.4	3 630.0
60-64	917.2	1 186.0	1 581.8	1 941.5	2 397.8	3 037.8
65-69	667.7	864.0	1 079.8	1 417.8	1 896.1	2 424.6
70-74	449.6	561.6	706.3	991.6	1 271.0	1 628.8
75-79	261.6	331.3	420.0	547.6	723.7	1 506.8
80-84	122.3	153.7	185.9	251.1	359.0	
85 & + . . .	54.3	75.3	91.2	117.0	156.4	236.8
All ages — Tous âges.	38 689.2	47 217.8	53 807.6	62 085.2	66 061.8	74 833.0
	Percentages — Pourcentages					
0- 4	11.98	11.39	10.89	9.35	8.11	11.00
5- 9	11.58	10.43	10.69	10.28	8.20	8.97
10-14	10.55	9.75	9.98	9.78	9.01	7.56
15-19	9.69	9.59	8.69	9.27	9.36	7.10
20-24	9.37	9.70	8.41	8.60	8.62	7.49
25-29	8.59	8.99	8.43	7.83	8.25	7.98
30-34	7.50	7.74	7.68	7.35	7.67	7.52
35-39	6.76	7.13	7.57	7.54	7.18	7.37
40-44	5.83	5.90	6.11	6.66	6.69	6.78
45-49	4.75	5.04	5.79	5.91	6.37	6.05
50-54	4.04	4.47	4.71	5.04	5.68	5.52
55-59	2.96	3.15	3.49	3.91	4.56	4.85
60-64	2.37	2.51	2.94	3.13	3.63	4.06
65-69	1.73	1.83	2.01	2.28	2.87	3.24
70-74	1.16	1.19	1.31	1.60	1.92	2.18
75-79	0.68	0.70	0.78	0.88	1.10	2.01
80-84	0.32	0.33	0.35	0.40	0.54	
85 & + . . .	0.14	0.16	0.17	0.19	0.24	0.32
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14	34.11	31.57	31.56	29.41	25.32	27.53
15-44	47.74	49.05	46.89	47.25	47.77	44.24
45-64	14.12	15.17	16.93	17.99	20.24	20.48
65 & + . . .	4.03	4.21	4.62	5.35	6.67	7.75
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*) **Tableau III** (*suite*)

3. UNITED STATES (*continued*) 3. ÉTATS-UNIS (*suite*)

Age (in years) (en années)	*Female — Féminin*					
	1900	*1910*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers					
0- 4	4 537.0	5 250.8	5 715.8	5 638.2	5 186.7	7 927.4
5- 9	4 394.7	4 836.5	5 645.1	6 226.5	5 265.8	6 485.1
10-14	3 997.2	4 505.3	5 271.8	5 936.1	5 793.6	5 458.9
15-19	3 805.6	4 536.3	4 756.8	5 794.3	6 153.4	5 305.3
20-24	3 710.4	4 476.7	4 750.0	5 533.6	5 895.4	5 875.5
25-29	3 205.9	3 935.7	4 548.3	4 973.4	5 646.0	6 270.2
30-34	2 654.7	3 315.4	3 940.4	4 558.6	5 172.1	5 892.3
35-39	2 347.9	3 029.1	3 700.9	4 528.8	4 799.7	5 728.8
40-44	1 991.3	2 475.2	3 060.0	3 853.7	4 368.7	5 133.7
45-49	1 616.8	2 090.3	2 646.1	3 370.4	4 046.0	4 544.1
50-54	1 378.2	1 790.8	2 199.3	2 844.2	3 504.1	4 143.5
55-59	1 065.9	1 298.5	1 669.1	2 219.7	2 832.5	3 605.1
60-64	874.2	1 081.2	1 400.7	1 809.7	2 330.5	3 021.6
65-69	635.3	815.5	988.7	1 352.8	1 910.6	2 578.4
70-74	434.2	552.1	688.7	958.4	1 298.6	1 783.1
75-79	258.3	336.0	436.6	558.8	780.3	1 771.0
80-84	129.2	168.0	216.9	283.5	415.4	
85 & + . . .	68.0	91.9	119.3	155.2	208.4	340.1
All ages — Tous âges .	37 104.8	44 585.3	51 754.5	60 595.9	65 607.8	75 864.1
	Percentages — Pourcentages					
0- 4	12.23	11.78	11.05	9.31	7.90	10.45
5- 9	11.84	10.85	10.91	10.28	8.03	8.55
10-14	10.77	10.10	10.19	9.80	8.83	7.20
15-19	10.26	10.17	9.19	9.56	9.38	6.99
20-24	10.00	10.04	9.18	9.13	8.99	7.74
25-29	8.64	8.83	8.79	8.21	8.60	8.27
30-34	7.15	7.44	7.61	7.52	7.88	7.77
35-39	6.33	6.79	7.15	7.47	7.32	7.55
40-44	5.37	5.55	5.91	6.36	6.66	6.77
45-49	4.36	4.69	5.11	5.56	6.17	5.99
50-54	3.71	4.02	4.25	4.69	5.34	5.46
55-59	2.87	2.91	3.22	3.66	4.32	4.75
60-64	2.36	2.42	2.71	2.99	3.55	3.98
65-69	1.71	1.83	1.91	2.23	2.91	3.40
70-74	1.17	1.24	1.33	1.58	1.98	2.35
75-79	0.70	0.75	0.84	0.92	1.19	2.33
80-84	0.35	0.38	0.42	0.47	0.63	
85 & + . . .	0.18	0.21	0.23	0.26	0.32	0.45
All ages — Tous âges .	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14	34.84	32.73	32.15	29.39	24.76	26.20
15-44	47.75	48.82	47.83	48.25	48.83	45.09
45-64	13.30	14.04	15.29	16.90	19.38	20.18
65 & + . . .	4.11	4.41	4.73	5.46	7.03	8.53
All ages — Tous âges .	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

3. UNITED STATES (*concluded*)

Tableau III (*suite*)

3. ÉTATS-UNIS (*fin*)

Age (In years) (en années)	*Both sexes — Les deux sexes*					
	1900	*1910*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers					
0- 4	9 170.7	10 631.4	11 573.2	11 444.4	10 541.5	16 163.5
5- 9	8 874.1	9 760.6	11 398.1	12 607.6	10 684.6	13 199.7
10-14	8 080.2	9 107.1	10 641.1	12 004.9	11 745.9	11 119.3
15-19	7 556.1	9 063.6	9 430.6	11 552.1	12 333.5	10 616.6
20-24	7 335.0	9 057.0	9 277.0	10 870.4	11 587.8	11 481.8
25-29	6 529.4	8 180.0	9 086.5	9 833.6	11 096.6	12 242.3
30-34	5 556.0	6 972.2	8 071.2	9 120.4	10 242.4	11 517.0
35-39	4 964.8	6 396.1	7 775.3	9 208.7	9 545.4	11 246.4
40-44	4 247.2	5 261.6	6 345.5	7 990.2	8 787.8	10 204.0
45-49	3 454.6	4 469.2	5 763.7	7 042.3	8 255.2	9 070.5
50-54	2 942.8	3 900.8	4 734.8	5 975.8	7 256.8	8 272.2
55-59	2 211.2	2 787.0	3 549.2	4 645.7	5 843.9	7 235.1
60-64	1 791.4	2 267.2	2 982.5	3 751.2	4 728.3	6 059.5
65-69	1 302.9	1 679.5	2 068.5	2 770.6	3 806.7	5 002.9
70-74	883.8	1 113.7	1 395.0	1 950.0	2 569.5	3 411.9
75-79	519.9	667.3	856.6	1 106.4	1 504.0	3 277.8
80-84	251.5	321.8	402.8	534.6	774.4	
85 & + . . .	122.4	167.3	210.5	272.2	364.8	576.9
All ages — Tous âges .	75 794.0	91 803.4	105 562.1	122 681.1	131 669.1	150 697.4
	Percentages — Pourcentages					
0- 4	12.10	11.58	10.96	9.33	8.01	10.73
5- 9	11.71	10.63	10.80	10.28	8.11	8.76
10-14	10.66	9.92	10.08	9.78	8.92	7.38
15-19	9.97	9.87	8.93	9.42	9.37	7.05
20-24	9.68	9.87	8.79	8.86	8.80	7.62
25-29	8.61	8.91	8.61	8.01	8.43	8.12
30-34	7.33	7.59	7.64	7.43	7.78	7.64
35-39	6.55	6.97	7.37	7.51	7.25	7.46
40-44	5.60	5.73	6.01	6.51	6.67	6.77
45-49	4.56	4.87	5.46	5.74	6.27	6.02
50-54	3.88	4.25	4.49	4.87	5.51	5.49
55-59	2.92	3.04	3.36	3.79	4.44	4.80
60-64	2.36	2.47	2.83	3.06	3.59	4.02
65-69	1.72	1.83	1.96	2.26	2.89	3.32
70-74	1.17	1.21	1.32	1.59	1.95	2.26
75-79	0.69	0.73	0.81	0.90	1.14	2.18
80-84	0.33	0.35	0.38	0.44	0.59	
85 & + . . .	0.16	0.18	0.20	0.22	0.28	0.38
All ages — Tous âges .	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14	34.47	32.13	31.84	29.39	25.04	26.87
15-44	47.74	48.94	47.35	47.74	48.30	44.66
45-64	13.72	14.63	16.14	17.46	19.81	20.33
65 & + . . .	4.07	4.30	4.67	5.41	6.85	8.14
All ages — Tous âges .	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1900, 1910 : *Annuaire international de statistique...*
1920, 1930 : *Le mouvement naturel...*
1940, 1950 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

4. ARGENTINA

Tableau III (*suite*)

4. ARGENTINE

Age (in years) (en années)	*Male — Masculin*		
	1895	*1914*	*1947*
	Numbers in 000's — Nombres en milliers		
0- 4	299.3	582.0	901.6
5- 9	515.1	517.1	798.2
10-14		437.8	772.3
15-19	189.8	434.3	789.1
20-24	178.8	457.9	748.8
25-29	184.7	420.2	642.1
30-34	165.4	332.4	617.7
35-39	153.7	264.4	597.6
40-44	116.1	212.4	553.2
45-49	93.9	166.1	468.0
50-54	68.2	140.5	386.1
55-59	41.6	94.1	316.1
60-64	32.7	73.2	224.7
65-69	15.2	39.1	142.2
70-74	11.3	26.9	84.4
75-79	5.0	12.6	43.7
80-84	3.6	7.2	21.3
85 & +	2.4	4.9	11.1
All ages — Tous âges	2 076.8	4 223.1	8 118.2
	Percentages — Pourcentages		
0- 4	14.41	13.78	11.11
5- 9	24.80	12.24	9.83
10-14		10.37	9.51
15-19	9.14	10.28	9.72
20-24	8.61	10.84	9.23
25-29	8.89	9.95	7.91
30-34	7.96	7.87	7.61
35-39	7.40	6.26	7.36
40-44	5.59	5.03	6.82
45-49	4.53	3.93	5.77
50-54	3.29	3.33	4.76
55-59	2.00	2.23	3.89
60-64	1.57	1.73	2.77
65-69	0.74	0.93	1.75
70-74	0.54	0.64	1.04
75-79	0.24	0.30	0.54
80-84	0.17	0.17	0.25
85 & +	0.12	0.12	0.13
All ages — Tous âges	100.0	100.0	100.0
	Summary — Résumé		
0-14	39.21	36.39	30.45
15-44	47.59	50.23	48.65
45-64	11.39	11.22	17.19
65 & +	1.81	2.16	3.71
All ages — Tous âges	100.0	100.0	100.0

Table III (*continued*)

4. ARGENTINA (*continued*)

Tableau III (*suite*)

4. ARGENTINE (*suite*)

Age (in years) (en années)	*Female — Féminin*		
	1895	*1914*	*1947*
	Numbers in 000's — Nombres en milliers		
0- 4	291.3	566.0	879.8
5- 9	481.1	503.6	779.5
10-14		420.8	753.0
15-19	201.7	406.3	780.7
20-24	173.7	382.9	741.1
25-29	158.8	322.9	644.1
30-34	129.5	234.8	609.6
35-39	114.7	207.3	561.2
40-44	89.8	154.9	473.4
45-49	63.2	125.4	402.6
50-54	52.4	105.7	312.3
55-59	29.5	71.4	262.0
60-64	30.1	62.1	193.7
65-69	13.6	34.3	135.7
70-74	12.6	26.4	84.6
75-79	5.2	13.0	51.1
80-84	5.2	9.3	27.0
85 & +	3.8	8.0	19.3
All ages — Tous âges	1 856.2	3 655.1	7 710.7
	Percentages — Pourcentages		
0- 4	15.70	15.49	11.41
5- 9	25.92	13.78	10.11
10-14		11.51	9.77
15-19	10.87	11.12	10.13
20-24	9.36	10.48	9.61
25-29	8.56	8.83	8.35
30-34	6.98	6.42	7.91
35-39	6.18	5.67	7.28
40-44	4.84	4.24	6.14
45-49	3.41	3.43	5.22
50-54	2.82	2.89	4.05
55-59	1.59	1.95	3.40
60-64	1.62	1.70	2.51
65-69	0.73	0.94	1.76
70-74	0.68	0.72	1.10
75-79	0.27	0.36	0.66
80-84	0.27	0.25	0.35
85 & +	0.20	0.22	0.24
All ages — Tous âges	100.0	100.0	100.0
	Summary — Résumé		
0-14	41.62	40.78	31.29
15-44	46.79	46.76	49.42
45-64	9.44	9.97	15.18
65 & +	2.15	2.49	4.11
All ages — Tous âges	100.0	100.0	100.0

Table III (*continued*)

4. ARGENTINA (*concluded*)

Tableau III (*suite*)

4. ARGENTINE (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*		
	1895	*1914*	*1947*
	Numbers in 000's — Nombres en milliers		
0- 4	590.6	1 148.0	1 781.4
5- 9	996.2	1 020.6	1 577.7
10-14		858.6	1 525.3
15-19	391.5	840.6	1 569.8
20-24	352.5	840.3	1 489.9
25-29	343.5	743.0	1 286.2
30-34	295.0	567.1	1 227.3
35-39	268.4	471.7	1 158.8
40-44	205.9	367.4	1 026.6
45-49	157.1	291.5	870.6
50-54	120.5	246.2	698.4
55-59	71.1	165.6	578.1
60-64	62.8	135.3	418.4
65-69	28.9	73.4	277.8
70-74	23.9	53.3	169.0
75-79	10.2	25.6	94.7
80-84	8.8	16.5	48.3
85 & +	6.2	12.9	30.4
All ages — Tous âges	3 933.1	7 878.1	15 828.7
	Percentages — Pourcentages		
0- 4	15.02	14.57	11.25
5- 9	25.33	12.96	9.97
10-14		10.90	9.63
15-19	9.96	10.67	9.92
20-24	8.96	10.67	9.41
25-29	8.74	9.43	8.12
30-34	7.50	7.20	7.75
35-39	6.83	5.99	7.32
40-44	5.24	4.66	6.49
45-49	4.00	3.70	5.50
50-54	3.06	3.12	4.41
55-59	1.81	2.10	3.65
60-64	1.60	1.72	2.64
65-69	0.73	0.93	1.75
70-74	0.61	0.68	1.07
75-79	0.25	0.32	0.61
80-84	0.21	0.21	0.32
85 & +	0.15	0.17	0.19
All ages — Tous âges	100.0	100.0	100.0
	Summary — Résumé		
0-14	40.35	38.43	30.85
15-44	47.23	48.62	49.01
45-64	10.47	10.64	16.20
65 & +	1.95	2.31	3.94
All ages — Tous âges	100.0	100.0	100.0

Sources : 1895, 1914 : *Annuaire international de statistique...*
1947 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

5. BRAZIL

Tableau III (*suite*)

5. BRÉSIL

Age (In years) (en années)	Male — Masculin			
	1900 [1]	1910	1940	1950
	Numbers in 000's — Nombres en milliers			
0- 4	3 814.3	...	3 255.5	4 235.9
5- 9		...	2 924.0	3 560.9
10-14		...	2 682.3	3 164.7
15-19	859.9	...	2 157.6	2 644.5
20-24	727.6	...	1 835.8	2 384.5
25-29	667.2	...	1 649.3	2 030.3
30-34	456.1	...	1 300.1	1 621.7
35-39	518.7	...	1 166.4	1 524.0
40-44	332.7	...	1 003.6	1 227.6
45-49	328.7	...	786.0	1 018.6
50-54	188.6	...	640.7	810.9
55-59	198.2	...	412.8	549.7
60-64	96.4	...	337.9	473.4
65-69	79.8	...	186.8	255.4
70-74	34.5	...	127.8	164.8
75-79	31.6	...	65.2	83.0
80-84	12.1	...	39.6	48.1
85 & +	17.6	...	28.1	33.3
All ages — Tous âges	8 364.0	...	20 599.5	25 831.3
	Percentages — Pourcentages			
0- 4	45.62	...	15.80	16.40
5- 9		...	14.19	13.78
10-14		...	13.02	12.25
15-19	10.28	...	10.47	10.24
20-24	8.70	...	8.91	9.23
25-29	7.98	...	8.00	7.86
30-34	5.45	...	6.31	6.28
35-39	6.20	...	5.66	5.90
40-44	3.98	...	4.87	4.75
45-49	3.93	...	3.82	3.94
50-54	2.26	...	3.12	3.14
55-59	2.37	...	2.00	2.13
60-64	1.15	...	1.64	1.83
65-69	0.95	...	0.92	0.99
70-74	0.41	...	0.62	0.64
75-79	0.38	...	0.32	0.32
80-84	0.14	...	0.19	0.19
85 & +	0.20	...	0.14	0.13
All ages — Tous âges	100.0	...	100.0	100.0
	Summary — Résumé			
0-14	45.62	...	43.01	42.43
15-44	42.59	...	44.22	44.26
45-64	9.71	...	10.58	11.04
65 & +	2.08	...	2.19	2.27
All ages — Tous âges	100.0	...	100.0	100.0

[1] Excluding Federal District and the Indian population.

[1] Non compris la population du district fédéral et la population indienne.

Table III (*continued*)

5. BRAZIL (*continued*)

Table III (*suite*)

5. BRÉSIL (*suite*)

Age (in years) (en années)	*Female — Féminin*			
	1900 [1]	*1910*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers			
0- 4	3 614.7	...	3 184.2	4 135.0
5- 9		...	2 834.8	3 454.7
10-14		...	2 645.8	3 143.9
15-19	922.8	...	2 286.3	2 857.8
20-24	754.1	...	1 977.5	2 606.7
25-29	702.9	...	1 707.1	2 102.0
30-34	433.0	...	1 281.2	1 623.3
35-39	507.6	...	1 154.0	1 517.0
40-44	289.3	...	946.2	1 161.1
45-49	315.2	...	706.0	958.1
50-54	158.7	...	605.7	773.8
55-59	181.3	...	385.7	516.0
60-64	82.0	...	352.1	462.8
65-69	76.5	...	199.4	259.9
70-74	32.5	...	156.1	195.6
75-79	33.5	...	78.6	101.8
80-84	12.1	...	58.2	70.7
85 & +	19.9	...	45.8	56.6
All ages — Tous âges	8 136.1	...	20 604.7	25 996.8
	Percentages — Pourcentages			
0- 4	44.43	...	15.46	15.90
5- 9		...	13.76	13.29
10-14		...	12.84	12.09
15-19	11.34	...	11.10	10.99
20-24	9.27	...	9.60	10.03
25-29	8.64	...	8.29	8.08
30-34	5.32	...	6.22	6.24
35-39	6.24	...	5.60	5.83
40-44	3.56	...	4.59	4.47
45-49	3.87	...	3.43	3.68
50-54	1.95	...	2.94	2.98
55-59	2.23	...	1.87	1.98
60-64	1.01	...	1.71	1.78
65-69	0.94	...	0.97	1.00
70-74	0.40	...	0.76	0.76
75-79	0.41	...	0.38	0.39
80-84	0.15	...	0.27	0.28
85 & +	0.24	...	0.21	0.23
All ages — Tous âges	100.0	...	100.0	100.0
	Summary — Résumé			
0-14	44.43	...	42.06	41.28
15-44	44.37	...	45.40	45.64
45-64	9.06	...	9.95	10.42
65 & +	2.14	...	2.59	2.66
All ages — Tous âges	100.0	...	100.0	100.0

[1] Excluding Federal District and the Indian population.

[1] Non compris la population du district fédéral et la population indienne.

Table III (*continued*)

5. BRAZIL (*concluded*)

Tableau III (*suite*)

5. BRÉSIL (*fin*)

Age (In years) (en années)	Both sexes — Les deux sexes			
	1900 [1]	1910 [2]	1940	1950
	Numbers in 000's — Nombres en milliers			
0- 4	7 429.0	3 227.9	6 439.6	8 370.9
5- 9		3 127.7	5 758.8	7 015.5
10-14		2 649.0	5 328.1	6 308.6
15-19	1 782.7	2 483.2	4 443.9	5 502.3
20-24	1 481.7	2 299.8	3 813.4	4 991.1
25-29	1 370.1	2 226.1	3 356.4	4 132.3
30-34	889.1	2 841.2	2 581.2	3 245.0
35-39	1 026.3		2 320.5	3 041.0
40-44	622.0	1 962.9	1 949.7	2 388.7
45-49	644.0		1 492.0	1 976.7
50-54	347.2	1 227.1	1 246.4	1 584.7
55-59	379.5		798.5	1 065.6
60-64	178.4	680.7	689.9	936.2
65-69	156.4		386.2	515.3
70-74	67.0	326.3	283.9	360.4
75-79	65.1		143.8	184.8
80-84	24.2	251.7	97.9	118.8
85 & +	37.5		73.9	89.9
All ages — Tous âges	16 500.2	23 303.6	41 204.1	51 827.8
	Percentages — Pourcentages			
0- 4	45.03	13.85	15.63	16.15
5- 9		13.43	13.98	13.53
10-14		11.37	12.93	12.17
15-19	10.81	10.66	10.79	10.61
20-24	8.98	9.87	9.25	9.63
25-29	8.31	9.55	8.15	7.97
30-34	5.39	12.19	6.26	6.26
35-39	6.22		5.63	5.87
40-44	3.77	8.43	4.73	4.61
45-49	3.90		3.62	3.81
50-54	2.10	5.27	3.02	3.06
55-59	2.30		1.94	2.06
60-64	1.08	2.91	1.67	1.81
65-69	0.95		0.94	0.99
70-74	0.41	1.40	0.69	0.70
75-79	0.39		0.35	0.36
80-84	0.14	1.07	0.24	0.23
85 & +	0.22		0.18	0.18
All ages — Tous âges	100.0	100.0	100.0	100.0
	Summary — Résumé			
0-14	45.03	38.65	42.54	41.85
15-44	43.48	...	44.81	44.95
45-64	9.38	...	10.25	10.74
65 & +	2.11	...	2.40	2.46
All ages — Tous âges	100.0	...	100.0	100.0

Sources : 1900 : *Annuaire international de statistique...*

1940, 1950 : *Demographic Yearbook. — Annuaire démographique.*

[1] Excluding Federal District and the Indian population.

[2] Excluding the Indian population.

[1] Non compris la population du district fédéral et la population indienne.

[2] Non compris la population indienne.

Table III (*continued*)

6. CHILE

Tableau III (*suite*)

6. CHILI

Age (in years) (en années)	Male — Masculin		
	1920	1930	1940
	Numbers in 000's — Nombres en milliers		
0- 4	274.9	332.4	334.7
5- 9	256.7	274.2	322.1
10-14	225.6	244.7	314.9
15-19	193.6	235.8	263.1
20-24	173.5	211.7	224.7
25-29	154.5	177.3	209.8
30-34	124.8	149.7	182.2
35-39	118.3	136.2	159.5
40-44	102.1	113.2	140.6
45-49	71.4	92.5	112.0
50-54	65.2	75.9	88.4
55-59	38.9	50.9	70.0
60-64	43.5	45.6	56.9
65 & +	59.1	69.5	81.3
All ages — Tous âges	1 902.1	2 209.6	2 560.2
	Percentages — Pourcentages		
0- 4	14.45	15.04	13.07
5- 9	13.50	12.41	12.58
10-14	11.86	11.07	12.30
15-19	10.18	10.67	10.28
20-24	9.12	9.58	8.78
25-29	8.12	8.02	8.20
30-34	6.56	6.77	7.12
35-39	6.22	6.16	6.23
40-44	5.37	5.12	5.49
45-49	3.75	4.19	4.38
50-54	3.43	3.43	3.45
55-59	2.05	2.30	2.73
60-64	2.29	2.07	2.22
65 & +	3.11	3.15	3.18
All ages — Tous âges	100.0	100.0	100.0
	Summary — Résumé		
0-14	39.81	38.52	37.95
15-44	45.57	46.32	46.10
45-64	11.52	11.99	12.78
65 & +	3.11	3.15	3.18
All ages — Tous âges	100.0	100.0	100.0

Table III (*continued*)

6. CHILE (*continued*)

Tableau III (*suite*)

6. CHILI (*suite*)

Age (in years) (en années)	*Female — Féminin*		
	1920	*1930*	*1940*
	Numbers in 000's — Nombres en milliers		
0- 4	268.8	328.2	326.5
5- 9	250.0	275.7	314.8
10-14	216.5	237.7	310.5
15-19	204.6	247.5	263.3
20-24	180.1	217.6	244.3
25-29	164.4	195.2	228.4
30-34	127.2	147.5	179.5
35-39	117.5	141.2	170.0
40-44	100.2	111.0	135.2
45-49	68.3	90.3	109.7
50-54	69.3	78.0	90.3
55-59	37.4	51.0	68.2
60-64	50.2	53.7	64.4
65 & +	67.1	82.7	99.1
All ages — Tous âges	1 921.6	2 257.2	2 604.1
	Percentages — Pourcentages		
0- 4	13.99	14.54	12.54
5- 9	13.01	12.22	12.09
10-14	11.26	10.53	11.92
15-19	10.65	10.97	10.11
20-24	9.37	9.64	9.38
25-29	8.55	8.65	8.77
30-34	6.62	6.54	6.89
35-39	6.11	6.26	6.53
40-44	5.21	4.92	5.19
45-49	3.55	4.00	4.21
50-54	3.61	3.46	3.47
55-59	1.95	2.26	2.62
60-64	2.61	2.38	2.47
65 & +	3.49	3.66	3.81
All ages — Tous âges	100.0	100.0	100.0
	Summary — Résumé		
0-14	38.26	37.29	36.55
15-44	46.51	46.98	46.87
45-64	11.22	12.10	12.77
65 & +	3.49	3.66	3.81
All ages — Tous âges	100.0	100.0	100.0

Table III (*continued*)

6. CHILE (*concluded*)

Tableau III (*suite*)

6. CHILI (*fin*)

Age (In years) (en années)	Both sexes — Les deux sexes		
	1920	1930	1940
	Numbers in 000's — Nombres en milliers		
0- 4	543.7	660.6	661.2
5- 9	506.6	549.8	636.9
10-14	442.0	482.4	625.4
15-19	398.2	483.3	526.3
20-24	353.6	429.2	469.0
25-29	318.9	372.5	438.2
30-34	252.0	297.2	361.7
35-39	235.8	277.4	329.5
40-44	202.3	224.2	275.8
45-49	139.7	182.8	221.7
50-54	134.5	153.9	178.6
55-59	76.2	101.7	138.1
60-64	93.7	99.3	121.3
65 & +	126.2	152.1	180.5
All ages — Tous âges	3 823.4	4 466.4	5 164.2
	Percentages — Pourcentages		
0- 4	14.22	14.79	12.80
5- 9	13.25	12.31	12.33
10-14	11.56	10.80	12.11
15-19	10.42	10.82	10.19
20-24	9.25	9.61	9.08
25-29	8.34	8.34	8.49
30-34	6.59	6.65	7.00
35-39	6.17	6.21	6.38
40-44	5.29	5.02	5.34
45-49	3.65	4.09	4.29
50-54	3.52	3.45	3.46
55-59	1.99	2.28	2.67
60-64	2.45	2.22	2.35
65 & +	3.30	3.41	3.50
All ages — Tous âges	100.0	100.0	100.0
	Summary — Résumé		
0-14	39.03	37.90	37.24
15-44	46.06	46.65	46.48
45-64	11.61	12.04	12.77
65 & +	3.30	3.41	3.50
All ages — Tous âges	100.0	100.0	100.0

Source : Tablas de vida para Chile : 1920, 1930 y 1940. Dirección General de Sanidad.

Table III (*continued*)

7. CEYLON

Tableau III (*suite*)

7. CEYLAN

Age (in years) (en années)	Male — Masculin				
	1891	1901	1911	1921	1946
	Numbers in 000's — Nombres en milliers				
0- 4	276.5	328.7	311.9	328.5	437.4
5- 9	247.1	263.9	289.0	293.3	411.8
10-14	169.4	201.6	271.5	295.2	414.6
15-19	141.2	179.8	178.0	214.5	364.5
20-24	142.4	182.7	193.9	221.5	327.8
25-29	155.1	194.7	207.2	219.1	307.3
30-34	97.5	121.0	165.3	174.2	246.5
35-39	103.8	126.1	151.1	174.1	261.1
40-44	55.8	68.1	104.6	117.2	182.4
45-49	55.4	68.5	85.5	102.8	183.4
50-54	34.4	41.9	65.0	71.2	104.8
55-59	58.7	61.0	51.7	58.9	94.7
60-64	19.6		45.6	49.1	71.2
65-69	18.5	58.0	20.3	24.3	124.8
70 & +	17.3		34.4	37.8	
All ages — Tous âges	1 593.2	1 896.2	2 175.0	2 381.7	3 532.3
	Percentages — Pourcentages				
0- 4	17.36	17.34	14.34	13.79	12.38
5- 9	15.51	13.92	13.29	12.31	11.66
10-14	10.63	10.63	12.48	12.39	11.74
15-19	8.86	9.48	8.18	9.01	10.32
20-24	8.94	9.64	8.91	9.30	9.28
25-29	9.74	10.27	9.53	9.20	8.70
30-34	6.12	6.38	7.60	7.31	6.98
35-39	6.52	6.65	6.95	7.31	7.39
40-44	3.50	3.59	4.81	4.92	5.16
45-49	3.48	3.61	3.93	4.32	5.19
50-54	2.16	2.21	2.99	2.99	2.97
55-59	3.68	3.22	2.38	2.47	2.68
60-64	1.23		2.10	2.06	2.02
65-69	1.16	3.06	0.93	1.02	3.53
70 & +	1.09		1.58	1.59	
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	43.50	41.89	40.11	38.49	35.78
15-44	43.68	46.01	45.98	47.05	47.83
45-64	10.55	12.10	11.40	11.84	12.86
65 & +	2.25		2.51	2.61	3.53
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

7. CEYLON (*continued*)

Tableau III (*suite*)

7. CEYLAN (*suite*)

Age (in years) (en années)	Female — Féminin				
	1891	1901	1911	1921	1946
	Numbers in 000's — Nombres en milliers				
0- 4	259.2	310.1	296.1	315.0	424.0
5- 9	217.6	240.1	275.5	281.6	399.5
10-14	136.5	161.4	235.7	257.8	391.0
15-19	172.0	206.2	168.9	199.3	316.1
20-24	137.5	173.7	195.1	220.1	313.7
25-29	143.7	171.2	189.7	201.5	270.3
30-34	65.7	82.2	139.2	150.5	203.4
35-39	86.2	101.2	103.1	123.1	207.2
40-44	37.3	48.5	89.9	99.7	139.9
45-49	62.0	70.0	60.9	73.8	136.1
50-54	23.8	27.4	70.2	73.7	91.3
55-59	37.8	39.0	31.1	35.9	68.5
60-64	9.6		36.3	39.0	59.3
65-69	12.7	38.5	12.6	15.9	104.7
70 & +	12.5		27.1	29.9	
All ages — Tous âges	1 414.1	1 669.5	1 931.3	2 116.8	3 125.0
	Percentages — Pourcentages				
0- 4	18.33	18.57	15.33	14.88	13.57
5- 9	15.39	14.38	14.27	13.30	12.78
10-14	9.65	9.67	12.21	12.18	12.51
15-19	12.16	12.35	8.75	9.41	10.12
20-24	9.72	10.40	10.10	10.40	10.04
25-29	10.16	10.25	9.82	9.52	8.65
30-34	4.65	4.92	7.21	7.11	6.51
35-39	6.10	6.06	5.34	5.81	6.63
40-44	2.64	2.90	4.66	4.71	4.48
45-49	4.38	4.19	3.15	3.49	4.36
50-54	1.68	1.64	3.64	3.48	2.92
55-59	2.67	2.34	1.61	1.70	2.19
60-64	0.68		1.88	1.84	1.90
65-69	0.90	2.31	0.65	0.75	3.35
70 & +	0.88		1.40	1.41	
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	43.37	42.62	41.81	40.36	38.86
15-44	45.43	46.88	45.88	46.96	46.43
45-64	9.41	10.48	10.28	10.51	11.37
65 & +	1.78		2.05	2.16	3.35
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

7. CEYLON (*concluded*)

Tableau III (*suite*)

7. CEYLAN (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*				
	1891	*1901*	*1911*	*1921*	*1946*
	Numbers in 000's — Nombres en milliers				
0- 4	535.7	638.8	608.0	643.5	861.4
5- 9	464.7	504.0	564.5	574.8	811.4
10-14	305.9	363.1	507.2	553.1	805.6
15-19	313.1	386.0	346.8	413.8	680.6
20-24	279.9	356.5	389.0	441.6	641.6
25-29	298.8	365.8	396.9	420.7	577.5
30-34	163.1	203.2	304.5	324.7	449.9
35-39	190.0	227.3	254.2	297.2	468.3
40-44	93.1	116.6	194.5	216.9	322.2
45-49	117.4	138.5	146.5	176.7	319.6
50-54	58.2	69.4	135.2	144.9	196.1
55-59	96.5	100.0	82.8	94.9	163.2
60-64	29.2		81.9	88.1	130.4
65-69	31.2	96.5	32.9	40.2	229.5
70 & +	29.8		61.5	67.7	
All ages — Tous âges	3 007.6	3 565.7	4 106.4	4 498.8	6 657.3
	Percentages — Pourcentages				
0- 4	17.81	17.91	14.81	14.30	12.94
5- 9	15.45	14.13	13.75	12.78	12.19
10-14	10.17	10.18	12.35	12.29	12.10
15-19	10.41	10.82	8.45	9.20	10.22
20-24	9.30	10.00	9.47	9.82	9.64
25-29	9.93	10.26	9.67	9.35	8.68
30-34	5.42	5.70	7.42	7.22	6.76
35-39	6.32	6.37	6.19	6.61	7.03
40-44	3.10	3.27	4.74	4.82	4.84
45-49	3.90	3.88	3.57	3.93	4.80
50-54	1.93	1.95	3.29	3.22	2.94
55-59	3.21	2.80	2.02	2.11	2.45
60-64	0.97		1.99	1.96	1.96
65-69	1.04	2.71	0.80	0.89	3.45
70 & +	0.99		1.50	1.50	
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	43.43	42.22	40.91	39.37	37.23
15-44	44.48	46.42	45.94	47.02	47.17
45-64	10.01	11.34	10.87	11.22	12.15
65 & +	2.03		2.30	2.39	3.45
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Source : Statistical Abstract of Ceylon, 1951.

Table III (*continued*)

8. INDIA

Tableau III (*suite*)

8. INDE

Age (in years) (en années)	Male — Masculin				
	1901	1911	1921	1931	1951 [1]
	Numbers in 000's — Nombres en milliers				
0- 4	18 735.9	21 236.2	19 484.8	25 444.6	23 940.9
5- 9	20 831.1	22 131.8	23 846.1	22 887.6	23 162.6
10-14	18 880.7	18 640.6	20 171.3	20 727.1	20 899.3
15-19	12 942.3	13 567.8	13 648.8	15 346.9	18 453.1
20-14	11 757.6	13 154.6	12 563.8	15 612.7	16 269.3
25-29	13 133.4	14 335.9	14 027.0	14 785.3	14 776.5
30-34	12 672.4	13 258.3	13 376.2	13 592.0	13 403.3
35-39	9 093.5	9 946.9	10 306.0	11 071.6	11 802.0
40-44	9 686.9	10 140.7	10 070.5	9 440.9	10 119.1
45-49	5 532.2	6 082.2	6 346.8	7 323.9	8 466.5
50-54	6 530.9	6 917.0	7 033.5	5 761.3	6 780.9
55-59	2 644.5	2 824.7	2 996.7	3 953.3	5 179.1
60-64		4 111.5	4 318.5	3 137.2	3 740.8
65-69		1 324.9	1 304.1	1 506.0	2 442.1
70-74	6 956.3				
75-79		2 328.1	2 587.1	2 134.7	3 851.2
80-84					
85 & +					
All ages — Tous âges	149 398.7	160 001.2	162 081.2	172 725.1	183 286.7
	Percentages — Pourcentages				
0- 4	12.54	13.27	12.02	14.73	13.06
5- 9	13.95	13.83	14.71	13.25	12.64
10-14	12.64	11.65	12.45	12.00	11.40
15-19	8.66	8.48	8.42	8.88	10.07
20-24	7.87	8.22	7.75	9.04	8.88
25-29	8.79	8.96	8.65	8.56	8.06
30-34	8.48	8.29	8.25	7.87	7.31
35-39	6.09	6.22	6.36	6.41	6.44
40-44	6.48	6.34	6.21	5.46	5.52
45-49	3.70	3.80	3.92	4.24	4.62
50-54	4.37	4.32	4.34	3.34	3.70
55-59	1.77	1.76	1.85	2.29	2.83
60-64		2.57	2.67	1.82	2.04
65-69		0.83	0.80	0.87	1.33
70-74	4.66				
75-79		1.46	1.60	1.24	2.10
80-84					
85 & +					
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	39.13	38.75	39.18	39.98	37.10
15-44	46.37	46.51	45.64	46.22	46.28
45-64	...	12.45	12.78	11.69	13.19
65 & +	...	2.29	2.40	2.11	3.43
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

[1] Smoothed age distribution based on a 10 per cent sample of census returns.

[1] Distribution par âge ajustée et calculée d'après un sondage à 10 pour 100 des bulletins de recensement.

Table III (*continued*)

8. INDIA (*continued*)

Tableau III (*suite*)

8. INDE (*suite*)

Age (In years) (en années)	*Female — Féminin*				
	1901	*1911*	*1921*	*1931*	*1951* [1]
	Numbers in 000's — Nombres en milliers				
0- 4	19 269.1	21 875.1	20 171.6	26 002.4	23 706.6
5- 9	19 895.5	21 112.8	22 901.3	20 818.4	22 350.4
10-14	15 566.7	15 222.7	16 570.5	18 246.1	19 561.0
15-19	12 017.8	12 613.7	12 496.1	15 178.3	17 422.9
20-24	12 834.9	14 187.3	13 502.3	15 975.7	15 767.0
25-29	12 875.0	13 882.7	13 573.0	14 114.2	14 162.4
30-34	12 249.1	12 740.7	12 761.6	12 282.1	12 420.0
35-39	8 023.4	8 484.2	8 662.7	9 686.0	10 586.5
40-44	9 383.6	9 627.2	9 512.1	8 202.4	8 926.4
45-49	4 879.3	5 162.4	5 297.5	6 309.0	7 488.7
50-54	6 510.3	6 758.7	6 707.1	5 104.2	6 116.1
55-59	2 430.0	2 497.4	2 577.8	3 734.1	4 847.7
60-64	7 945.0	4 649.7	4 564.6	3 102.9	3 663.0
65-69		1 150.5	1 215.3	1 458.9	2 476.7
70-74					
75-79		2 676.8	2 755.6	2 172.2	4 016.6
80-84					
85 & +					
All ages — Tous âges	143.929.7	152 641.9	153 269.1	162 386.9	173 512.0
	Percentages — Pourcentages				
0- 4	13.39	14.33	13.16	16.01	13.66
5- 9	13.82	13.83	14.94	12.82	12.88
10-14	10.82	9.97	10.31	11.24	11.27
15-19	8.35	8.26	8.15	9.35	10.04
20-24	8.92	9.30	8.81	9.84	9.09
25-29	8.95	9.09	8.86	8.69	8.16
30-34	8.51	8.35	8.32	7.56	7.16
35-39	5.57	5.56	5.65	5.96	6.10
40-44	6.52	6.31	6.21	5.05	5.14
45-49	3.39	3.38	3.46	3.89	4.32
50-54	4.52	4.43	4.38	3.14	3.53
55-59	1.69	1.64	1.68	2.30	2.79
60-64	5.55	3.05	2.98	1.91	2.11
65-69		0.75	0.79	0.90	1.43
70-74					
75-79		1.75	1.80	1.34	2.32
80-84					
85 & +					
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	38.03	38.13	38.91	40.07	37.81
15-44	46.82	46.87	46.00	46.45	45.69
45-64	...	12.50	12.50	11.24	12.75
65 & +	...	2.50	2.59	2.24	3.75
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

[1] Smoothed age distribution based on a 10 per cent sample of census returns.

[1] Distribution par âge ajustée et calculée d'après un sondage à 10 pour 100 des bulletins de recensement.

Table III (*continued*) **Tableau III** (*suite*)

8. INDIA (*concluded*) 8. INDE (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*				
	1901	*1911*	*1921*	*1931*	*1951* [1]
	Numbers in 000's — Nombres en milliers				
0- 4	38 005.0	43 111.3	39 656.4	51 447.1	47 647.5
5- 9	40 726.5	43 244.7	49 747.4	43 705.9	45 513.0
10-14	34 447.4	33 863.3	36 741.9	38 973.2	40 460.3
15-19	24 960.2	26 181.5	26 144.9	30 525.2	35 876.0
20-24	24 592.5	27 341.9	26 066.1	31 588.4	32 036.3
25-29	26 008.5	28 218.6	27 600.0	28 899.5	28 938.9
30-34	24 921.6	25 998.9	26 137.8	25 874.2	25 823.3
35-39	17 117.0	18 431.1	18 968.7	20 757.6	22 388.5
40-44	19 070.6	19 768.0	19 582.5	17 643.3	19 045.5
45-49	10 411.5	11 244.5	11 644.3	13 632.9	15 955.2
50-54	13 041.1	13 675.7	13 740.6	10 865.4	12 897.0
55-59	5 074.4	5 322.1	5 574.5	7 687.4	10 026.8
60-64		8 761.2	8 883.1	6 240.0	7 403.8
65-69		2 475.3	2 519.4	2 964.8	4 918.8
70-74	14 951.3				
75-79		5 004.9	5 342.8	4 306.9	7 867.8
80-84					
85 & +					
All ages — Tous âges	293 327.6	312 643.0	315 350.4	335 111.8	356 798.7
	Percentages — Pourcentages				
0- 4	12.96	13.79	12.58	15.35	13.35
5- 9	13.88	13.83	14.82	13.04	12.76
10-14	11.74	10.83	11.65	11.63	11.34
15-19	8.51	8.37	8.29	9.11	10.05
20-24	8.38	8.75	8.26	9.43	8.98
25-29	8.87	9.03	8.75	8.62	8.11
30-34	8.50	8.32	8.29	7.72	7.24
35-39	5.84	5.90	6.02	6.20	6.27
40-44	6.50	6.32	6.21	5.27	5.34
45-49	3.55	3.60	3.69	4.07	4.47
50-54	4.44	4.37	4.36	3.24	3.61
55-59	1.73	1.70	1.77	2.29	2.81
60-64		2.80	2.82	1.86	2.08
65-69		0.79	0.80	0.88	1.38
70-74	5.10				
75-79		1.60	1.69	1.29	2.21
80-84					
85 & +					
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	38.58	38.45	39.05	40.02	37.45
15-44	46.60	46.69	45.82	46.35	45.99
45-64	...	12.47	12.64	11.46	12.97
65 & +	...	2.39	2.49	2.17	3.59
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Sources : 1901, 1911 : *Annuaire international de statistique...*

1921 : Census of India, 1921, vol. I.

1931 : *Demographic Yearbook.* — *Annuaire démographique.*

[1] Smoothed age distribution based on a 10 per cent sample of census returns.

[1] Distribution par âge ajustée et calculée d'après un sondage à 10 pour 100 des bulletins de recensement.

Table III (*continued*)

Tableau III (*suite*)

9. JAPAN

9. JAPON

Age (in years) (en années)	Male — Masculin			
	1920	1930	1940	1950
	Numbers in 000's — Nombres en milliers			
0- 4	3 712.6	4 501.0	4 578.0	5 715.0
5- 9	3 432.6	3 876.5	4 424.0	4 834.0
10-14	3 057.1	3 401.9	4 204.4	4 405.0
15-19	2 720.8	3 292.0	3 694.8	4 306.0
20-24	2 295.9	2 797.5	3 040.0	3 815.0
25-29	1 987.2	2 465.2	2 823.1	2 811.0
30-34	1 817.1	2 160.9	2 494.1	2 349.0
35-39	1 691.6	1 842.3	2 247.5	2 375.0
40-44	1 625.0	1 675.4	1 964.4	2 207.0
45-49	1 326.0	1 512.1	1 636.8	2 017.0
50-54	1 109.8	1 398.1	1 445.8	1 721.0
55-59	903.2	1 074.9	1 230.1	1 375.0
60-64	796.5	811.5	1 040.0	1 109.0
65-69	610.4	571.9	695.4	800.0
70-74	397.0	400.8	416.6	807.0
75-79	196.9	221.0	214.0	
80 & +	89.6	114.4	120.7	129.0
All ages — Tous âges	27 769.3	32 117.4	36 269.7	40 775.0
	Percentages — Pourcentages			
0- 4	13.37	14.01	12.62	14.01
5- 9	12.36	12.07	12.20	11.85
10-14	11.01	10.59	11.59	10.80
15-19	9.80	10.25	10.19	10.56
20-24	8.27	8.71	8.38	9.35
25-29	7.16	7.67	7.78	6.89
30-34	6.54	6.73	6.88	5.76
35-39	6.09	5.73	6.20	5.82
40-44	5.85	5.21	5.41	5.41
45-49	4.77	4.71	4.52	4.95
50-54	4.00	4.35	3.99	4.22
55-59	3.25	3.35	3.39	3.37
60-64	2.87	2.53	2.87	2.72
65-69	2.20	1.78	1.92	1.96
70-74	1.43	1.25	1.15	1.98
75-79	0.71	0.69	0.59	
80 & +	0.32	0.36	0.33	0.32
All ages — Tous âges	100.0	100.0	100.0	100.0
	Summary — Résumé			
0-14	36.74	36.67	36.41	36.66
15-44	43.71	44.30	44.84	43.79
45-64	14.89	14.94	14.77	15.26
65 & +	4.66	4.08	3.99	4.26
All ages — Tous âges	100.0	100.0	100.0	100.0

Table III (*continued*)

9. JAPAN (*continued*)

Tableau III (*suite*)

9. JAPON (*suite*)

Age (in years) (en années)	Female — Féminin			
	1920	1930	1940	1950
	Numbers in 000's — Nombres en milliers			
0- 4	3 664.6	4 425.7	4 468.3	5 488.0
5- 9	3 355.4	3 814.7	4 331.4	4 709.0
10-14	2 980.0	3 330.5	4 128.8	4 310.0
15-19	2 641.6	3 195.8	3 669.7	4 243.0
20-24	2 269.7	2 694.2	3 027.2	3 899.0
25-29	1 894.2	2 334.7	2 798.1	3 354.0
30-34	1 757.4	2 020.8	2 422.3	2 840.0
35-39	1 685.7	1 710.2	2 144.5	2 677.0
40-44	1 587.5	1 582.8	1 841.4	2 278.0
45-49	1 303.0	1 506.2	1 541.9	1 983.0
50-54	1 098.7	1 406.2	1 416.6	1 674.0
55-59	917.4	1 117.4	1 306.1	1 368.0
60-64	844.0	890.5	1 166.5	1 196.0
65-69	691.7	670.6	842.7	972.0
70-74	492.4	516.8	566.0	1 157.0
75-79	280.4	325.9	326.1	
80 & +	158.3	212.3	232.5	247.0
All ages — Tous âges	27 622.0	31 755.3	36 230.1	42 395.0
	Percentages — Pourcentages			
0- 4	13.27	13.94	12.33	12.94
5- 9	12.15	12.01	11.95	11.11
10-14	10.79	10.49	11.40	10.16
15-19	9.56	10.06	10.13	10.01
20-24	8.22	8.48	8.35	9.20
25-29	6.86	7.35	7.72	7.91
30-34	6.36	6.36	6.68	6.70
35-39	6.10	5.38	5.92	6.31
40-44	5.75	4.98	5.08	5.37
45-49	4.72	4.74	4.26	4.68
50-54	3.98	4.43	3.91	3.95
55-59	3.32	3.52	3.60	3.23
60-64	3.06	2.80	3.22	2.82
65-69	2.50	2.11	2.32	2.29
70-74	1.78	1.63	1.56	2.73
75-79	1.02	1.03	0.90	
80 & +	0.57	0.67	0.64	0.58
All ages — Tous âges	100.0	100.0	100.0	100.0
	Summary — Résumé			
0-14	36.21	36.44	35.68	34.21
15-44	42.85	42.61	43.88	45.50
45-64	15.08	15.49	14.99	14.68
65 & +	5.87	5.44	5.42	5.60
All ages — Tous âges	100.0	100.0	100.0	100.0

Table III (*continued*)

9. JAPAN (*concluded*)

Tableau III (*suite*)

9. JAPON (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*			
	1920	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers			
0- 4	7 377.2	8 926.7	9 046.3	11 203
5- 9	6 787.9	7 691.1	8 755.3	9 541
10-14	6 037.1	6 732.3	8 333.2	8 715
15-19	5 362.4	6 487.8	7 364.5	8 549
20-24	4 565.6	5 491.7	6 067.2	7 714
25-29	3 881.4	4 799.9	5 621.1	6 165
30-34	3 574.6	4 181.7	4 916.5	5 188
35-39	3 377.3	3 552.4	4 392.0	5 051
40-44	3 212.5	3 258.1	3 805.7	4 484
45-49	2 629.0	3 018.3	3 178.7	4 000
50-54	2 208.5	2 804.3	2 862.4	3 396
55-59	1 820.7	2 192.3	2 536.2	2 743
60-64	1 640.5	1 702.0	2 206.5	2 304
65-69	1 302.2	1 242.5	1 538.1	1 772
70-74	889.3	917.6	982.6	1 964
75-80	477.3	547.0	540.1	
80 & +	248.0	326.7	353.2	377
All ages — Tous âges	55 391.5	63 872.4	72 499.6	83.166
	Percentages — Pourcentages			
0- 4	13.32	13.98	12.48	13.47
5- 9	12.25	12.04	12.08	11.47
10-14	10.90	10.54	11.49	10.48
15-19	9.68	10.16	10.16	10.28
20-24	8.24	8.60	8.37	9.28
25-29	7.01	7.52	7.75	7.41
30-34	6.45	6.55	6.78	6.24
35-39	6.10	5.56	6.06	6.07
40-44	5.80	5.10	5.25	5.39
45-49	4.75	4.72	4.38	4.81
50-54	3.99	4.39	3.95	4.08
55-59	3.29	3.43	3.50	3.30
60-64	2.96	2.66	3.04	2.77
65-69	2.35	1.94	2.12	2.13
70-74	1.60	1.44	1.36	2.36
75-79	0.86	0.86	0.74	
80 & +	0.45	0.51	0.49	0.45
All ages — Tous âges	100.0	100.0	100.0	100.0
	Summary — Résumé			
0-14	36.47	36.56	36.05	35.42
15-44	43.28	43.49	44.37	44.67
45-64	14.99	15.20	14.87	14.96
65 & +	5.26	4.75	4.71	4.94
All ages — Tous âges	100.0	100.0	100.0	100.0

Source : Statistical Yearbook of Japan, 1951. — *Annuaire statistique du Japon*, 1951.

Table III (*continued*)

10. AUSTRIA

Tableau III (*suite*)

10. AUTRICHE

Age (in years) (en années)	*Male — Masculin*									
	1869	*1880*	*1890*	*1900*	*1910*	*1920*	*1927*	*1934*	*1939*	*1951*
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	1 322.7	1 449.2	1 527.9	1 707.5	1 778.5	194.0	273.4	237.3	216.1	270.9
5- 9. . . .	1 096.0	1 208.6	1 321.0	1 463.8	1 663.9	287.4	256.8	272.5	230.8	261.1
10-14. . . .	1 020.0	1 089.9	1 221.6	1 328.1	1 548.6	301.2	230.4	298.9	266.3	276.1
15-19. . . .	922.1	1 021.2	1 110.2	1 219.3	1 348.9	310.6	316.5	196.5	288.5	223.9
20-24. . . .	854.6	950.9	1 003.6	1 132.7	1 169.8	261.8	315.1	293.4	190.4	243.5
25-29. . . .	800.1	800.9	892.3	974.5	1 018.8	217.7	295.6	294.1	285.5	223.6
30-34. . . .	713.2	741.9	825.8	869.7	932.7	212.0	242.0	287.5	287.5	159.0
35-39. . . .	646.8	698.7	705.1	790.7	867.2	207.7	216.3	236.5	280.0	203.0
40-44. . . .	560.0	641.9	656.2	740.3	777.1	200.9	209.0	202.5	228.9	241.5
45-49. . . .	546.8	538.2	601.7	608.6	698.7	178.8	197.5	195.9	191.8	254.4
50-54. . . .	464.3	465.1	526.9	555.6	625.5	156.2	182.6	183.7	182.8	226.8
55-59. . . .	375.8	399.5	412.1	473.6	499.1	133.6	153.9	168.3	166.4	176.7
60-64. . . .	269.3	341.7	332.4	386.8	406.2	105.7	126.3	136.3	147.4	149.0
65-69. . . .	207.6	227.9	248.0	265.6	311.8	78.9	94.5	104.3	112.3	123.7
70-74. . . .	108.0	137.6	174.2	177.7	207.9	49.4	61.3	72.4	77.3	92.1
75-79. . . .	56.6	70.6	85.4	97.3	111.7	26.7	33.8	39.9	45.2	56.2
80-84. . . .	19.2	27.2	32.5	45.6	48.0	10.0	12.5	17.7	19.2	25.1
85 & + . . .	8.3	8.7	12.1	15.1	17.9	3.0	3.4	5.3	6.5	8.9
All ages — Tous âges.	9 991.4	10 819.7	11 689.0	12 852.5	14 032.3	2 935.6	3 220.9	3 243.0	3 222.9	3 215.5
	Percentages — Pourcentages									
0- 4. . . .	13.24	13.39	13.07	13.29	12.68	6.61	8.49	7.32	6.71	8.43
5- 9. . . .	10.97	11.17	11.30	11.39	11.86	9.79	7.97	8.40	7.16	8.12
10-14. . . .	10.21	10.07	10.45	10.33	11.04	10.26	7.15	9.22	8.26	8.59
15-19. . . .	9.23	9.44	9.50	9.49	9.61	10.58	9.83	6.06	8.95	6.96
20-24. . . .	8.55	8.79	8.59	8.81	8.34	8.92	9.78	9.05	5.91	7.57
25-29. . . .	8.01	7.40	7.63	7.58	7.26	7.42	9.18	9.07	8.86	6.95
30-34. . . .	7.14	6.86	7.07	6.77	6.65	7.22	7.51	8.87	8.92	4.95
35-39. . . .	6.47	6.46	6.03	6.15	6.18	7.08	6.72	7.29	8.69	6.31
40-44. . . .	5.60	5.93	5.61	5.76	5.54	6.84	6.49	6.24	7.10	7.51
45-49. . . .	5.47	4.98	5.15	4.74	4.98	6.09	6.13	6.04	5.95	7.91
50-54. . . .	4.65	4.30	4.51	4.32	4.46	5.32	5.67	5.66	5.67	7.05
55-59. . . .	3.76	3.69	3.53	3.68	3.56	4.55	4.78	5.19	5.16	5.50
60-64. . . .	2.70	3.16	2.84	3.01	2.90	3.60	3.92	4.20	4.57	4.63
65-69. . . .	2.08	2.11	2.12	2.07	2.22	2.69	2.93	3.22	3.49	3.85
70-74. . . .	1.08	1.27	1.49	1.38	1.48	1.68	1.90	2.23	2.40	2.86
75-79. . . .	0.57	0.65	0.73	0.76	0.80	0.91	1.05	1.23	1.40	1.75
80-84. . . .	0.19	0.25	0.28	0.35	0.34	0.34	0.39	0.55	0.60	0.78
85 & + . . .	0.08	0.08	0.10	0.12	0.10	0.10	0.11	0.16	0.20	0.28
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	34.42	34.63	34.82	35.01	35.58	26.66	23.61	24.94	22.13	25.14
15-44. . . .	45.00	44.88	44.43	44.56	43.58	48.06	49.51	46.58	48.43	40.25
45-64. . . .	16.58	16.13	16.03	15.75	15.90	19.56	20.50	21.09	21.35	25.09
65 & + . . .	4.00	4.36	4.72	4.68	4.94	5.72	6.38	7.39	8.09	9.52
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

10. AUSTRIA (*continued*)

Tableau III (*suite*)

10. AUTRICHE (*suite*)

Age (in years) (en années)	*Female — Féminin*									
	1869	*1880*	*1890*	*1900*	*1910*	*1920*	*1927*	*1934*	*1939*	*1951*
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	1 336.6	1 465.7	1 543.8	1 706.1	1 768.8	190.5	269.9	231.4	209.5	258.9
5- 9. . . .	1 116.3	1 213.1	1 312.2	1 445.5	1 636.8	286.0	251.8	266.3	224.3	252.3
10-14. . . .	1 009.4	1 101.8	1 233.9	1 347.1	1 557.6	297.0	229.7	292.5	259.1	267.4
15-19. . . .	974.3	1 065.0	1 159.3	1 274.4	1 405.5	308.2	313.6	196.2	276.7	216.3
20-24. . . .	886.8	994.4	1 046.5	1 152.3	1 205.0	293.2	313.6	295.8	175.9	242.7
25-29. . . .	869.6	842.6	936.1	1 002.9	1 078.1	266.6	306.6	300.1	280.1	293.7
30-34. . . .	761.8	791.4	871.6	911.9	991.6	256.3	283.5	298.4	287.7	213.5
35-39. . . .	698.4	737.4	732.6	809.4	895.7	235.5	257.3	278.2	286.0	260.1
40-44. . . .	615.5	693.2	697.9	767.2	807.7	225.5	244.7	247.3	265.7	295.1
45-49. . . .	590.0	577.2	636.8	632.6	722.3	191.0	226.2	237.8	237.0	287.1
50-54. . . .	477.2	533.0	584.4	605.6	669.8	166.0	206.1	213.5	224.6	266.6
55-59. . . .	390.6	440.9	451.5	507.2	534.2	144.9	168.1	196.7	199.6	233.0
60-64. . . .	276.4	371.0	389.4	435.5	454.9	120.6	139.8	156.2	178.2	200.7
65-69. . . .	210.8	237.2	277.8	300.1	348.0	95.2	108.5	122.1	134.7	168.3
70-74. . . .	103.0	147.3	190.6	209.6	244.0	63.0	73.8	87.5	94.4	128.1
75-79. . . .	57.5	73.1	91.2	115.9	131.8	36.7	43.3	52.0	58.5	79.9
80-84. . . .	19.8	29.3	36.6	53.3	61.4	14.4	16.6	24.8	27.1	36.3
85 & + . . .	9.4	10.9	14.3	21.3	25.2	5.2	4.9	8.5	10.9	14.5
All ages — Tous âges.	10 403.4	11 324.5	12 206.5	13 297.9	14 538.4	3 195.8	3 458.0	3 505.3	3 430.0	3 714.5
	Percentages — Pourcentages									
0- 4. . . .	12.85	12.94	12.64	12.83	12.17	5.96	7.81	6.60	6.10	6.97
5- 9. . . .	10.73	10.71	10.75	10.87	11.26	8.95	7.28	7.60	6.53	6.79
10-14. . . .	9.70	9.73	10.11	10.13	10.71	9.29	6.64	8.34	7.55	7.20
15-19. . . .	9.37	9.40	9.50	9.58	9.67	9.64	9.07	5.60	8.07	5.82
20-24. . . .	8.52	8.78	8.57	8.67	8.29	9.18	9.07	8.44	5.13	6.53
25-29. . . .	8.36	7.44	7.67	7.54	7.42	8.34	8.87	8.56	8.17	7.91
30-34. . . .	7.32	6.99	7.14	6.86	6.82	8.02	8.20	8.51	8.39	5.75
35-39. . . .	6.71	6.51	6.00	6.09	6.16	7.37	7.44	7.94	8.34	7.00
40-44. . . .	5.92	6.12	5.72	5.77	5.55	7.06	7.08	7.06	7.75	7.95
45-49. . . .	5.67	5.10	5.22	4.76	4.97	5.98	6.54	6.78	6.91	7.73
50-54. . . .	4.59	4.71	4.79	4.55	4.61	5.19	5.96	6.09	6.55	7.18
55-59. . . .	3.75	3.89	3.70	3.81	3.67	4.54	4.86	5.61	5.82	6.27
60-64. . . .	2.66	3.28	3.19	3.27	3.13	3.77	4.04	4.46	5.20	5.40
65-69. . . .	2.03	2.09	2.27	2.26	2.39	2.98	3.14	3.48	3.93	4.53
70-74. . . .	0.99	1.30	1.56	1.58	1.68	1.97	2.13	2.50	2.75	3.45
75-79. . . .	0.55	0.65	0.75	0.87	0.91	1.15	1.25	1.48	1.70	2.15
80-84. . . .	0.19	0.26	0.30	0.40	0.42	0.45	0.48	0.71	0.79	0.98
85 & + . . .	0.09	0.10	0.12	0.16	0.17	0.16	0.14	0.24	0.32	0.39
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	33.28	33.38	33.50	33.83	34.14	24.20	21.73	22.54	20.18	20.96
15-44. . . .	46.20	45.24	44.60	44.51	43.91	49.61	49.73	46.11	45.85	40.96
45-46. . . .	16.67	16.98	16.90	16.39	16.38	19.48	21.40	22.94	24.48	26.58
65 & + . . .	3.85	4.40	5.00	5.27	5.57	6.71	7.14	8.41	9.49	11.50
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

10. AUSTRIA (*concluded*)

Tableau III (*suite*)

10. AUTRICHE (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes									
	1869	1880	1890	1900	1910	1920	1927	1934	1939	1951
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	2 659.3	2 914.9	3 071.7	3 413.6	3 547.2	384.5	543.3	468.7	425.5	529.8
5- 9. . . .	2 212.3	2 421.7	2 633.2	2 909.3	3 300.7	573.4	508.6	538.8	455.1	513.4
10-14. . . .	2 029.4	2 191.7	2 455.5	2 675.2	3 106.2	598.2	460.1	591.4	525.4	543.5
15-19. . . .	1 896.3	2 086.2	2 269.5	2 493.7	2 754.4	618.8	630.1	392.7	565.1	440.2
20-24. . . .	1 741.4	1 945.3	2 050.2	2 285.1	2 374.8	555.0	628.7	589.2	366.3	486.2
25-29. . . .	1 669.7	1 643.5	1 828.5	1 977.5	2 096.9	484.3	602.2	594.2	565.6	517.3
30-34. . . .	1 475.0	1 533.2	1 697.4	1 781.7	1 924.5	468.3	525.5	585.9	575.2	372.4
35-39. . . .	1 345.2	1 436.1	1 437.7	1 600.1	1 762.9	443.2	473.6	514.7	566.1	463.1
40-44. . . .	1 175.5	1 335.0	1 354.1	1 507.6	1 584.7	426.4	453.7	449.8	494.6	536.7
45-49. . . .	1 136.8	1 115.4	1 238.4	1 241.2	1 421.0	369.8	423.7	433.7	428.7	541.4
50-54. . . .	941.5	998.2	1 111.3	1 161.2	1 295.3	322.3	388.7	397.2	407.4	493.4
55-59. . . .	766.5	840.3	863.6	980.8	1 033.3	278.5	322.0	365.0	366.0	409.7
60-64. . . .	545.7	712.7	721.8	822.3	861.1	226.3	266.1	292.5	325.6	349.7
65-69. . . .	418.5	465.1	525.8	565.7	659.8	174.1	203.0	226.4	246.9	292.0
70-74. . . .	210.9	284.9	364.8	387.3	451.9	112.4	135.1	159.9	171.7	220.2
75-79. . . .	114.1	143.7	176.5	213.2	243.5	63.4	77.1	91.9	103.7	136.1
80-84. . . .	39.0	56.6	69.0	98.9	109.4	24.4	29.1	42.5	46.3	61.3
85 & + . . .	17.6	19.7	26.4	36.4	43.1	8.2	8.3	13.8	17.4	23.4
All ages — Tous âges.	20 394.7	22 144.2	23 895.4	26 150.8	28 570.7	6 131.4	6 678.9	6 748.3	6 652.6	6 929.8
	Percentages — Pourcentages									
0- 4. . . .	13.04	13.16	12.85	13.05	12.42	6.27	8.13	6.95	6.40	7.65
5- 9. . . .	10.85	10.94	11.02	11.12	11.55	9.35	7.62	7.98	6.84	7.41
10-14. . . .	9.95	9.90	10.28	10.23	10.87	9.76	6.89	8.76	7.90	7.84
15-19. . . .	9.30	9.42	9.50	9.54	9.64	10.09	9.44	5.82	8.49	6.35
20-24. . . .	8.54	8.78	8.58	8.74	8.31	9.05	9.41	8.73	5.51	7.02
25-29. . . .	8.19	7.42	7.65	7.56	7.34	7.90	9.02	8.81	8.50	7.47
30-34. . . .	7.23	6.92	7.10	6.81	6.74	7.64	7.87	8.68	8.65	5.37
35-39. . . .	6.60	6.48	6.02	6.12	6.17	7.23	7.09	7.63	8.51	6.68
40-44. . . .	5.76	6.03	5.67	5.77	5.55	6.96	6.79	6.67	7.44	7.75
45-49. . . .	5.57	5.04	5.18	4.75	4.98	6.03	6.34	6.43	6.44	7.81
50-54. . . .	4.62	4.51	4.65	4.44	4.53	5.26	5.82	5.89	6.12	7.12
55-59. . . .	3.76	3.79	3.61	3.75	3.62	4.54	4.82	5.41	5.50	5.91
60-64. . . .	2.67	3.22	3.02	3.14	3.01	3.69	3.99	4.33	4.89	5.05
65-69. . . .	2.05	2.10	2.20	2.16	2.31	2.84	3.04	3.35	3.71	4.21
70-74. . . .	1.03	1.29	1.53	1.48	1.58	1.83	2.02	2.37	2.58	3.18
75-79. . . .	0.56	0.65	0.74	0.82	0.85	1.03	1.15	1.36	1.56	1.96
80-84. . . .	0.19	0.26	0.29	0.38	0.38	0.40	0.44	0.63	0.70	0.88
85 & + . . .	0.09	0.09	0.11	0.14	0.15	0.13	0.12	0.20	0.26	0.34
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	33.84	34.00	34.15	34.40	34.84	25.38	22.64	23.69	21.14	22.90
15-44. . . .	45.62	45.05	44.52	44.54	43.75	48.87	49.62	46.34	47.10	40.64
45-64. . . .	16.62	16.56	16.46	16.08	16.14	19.52	20.97	22.06	22.95	25.89
65 & + . . .	3.92	4.39	4.87	4.98	5.27	6.23	6.77	7.91	8.81	10.57
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1869, 1880, 1890 : J. Bertillon, *Statistique internationale résultant des recensements de la population exécutés dans les divers pays de l'Europe pendant le XIX^e siècle et les époques précédentes*, Paris, 1899.

1900, 1910 : *Annuaire international de statistique...*

1920, 1927, 1934 : *Le mouvement naturel...*

1939, 1951 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

11. Belgium

Tableau III (*suite*)

11. Belgique

Age (in years) (en années)	Male — Masculin									
	1846	1856	1866	1880	1890	1900	1910	1920	1930	1947
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	254.3	244.8	291.0	343.6	352.5	394.2	381.8	260.1	335.9	326.9
5- 9. . . .	239.5	224.3	253.5	308.6	330.4	346.8	383.8	320.5	348.7	267.7
10-14. . . .	216.7	222.5	223.4	278.6	316.0	324.7	372.4	349.3	252.4	293.9
15-19. . . .	197.4	216.8	213.7	256.4	300.8	323.8	344.4	364.2	326.5	327.7
20-24. . . .	197.8	201.2	204.2	231.6	279.1	304.7	316.8	341.9	357.2	347.8
25-29. . . .	164.8	179.5	190.4	196.1	230.9	276.4	304.5	292.1	366.4	308.1
30-34. . . .	151.4	169.9	169.2	175.4	205.1	241.9	282.1	271.5	335.9	266.4
35-39. . . .	144.3	151.0	154.8	174.9	174.9	210.7	257.6	267.4	286.4	324.8
40-44. . . .	133.9	137.9	147.2	158.9	156.2	186.2	225.4	250.5	262.8	329.8
45-49. . . .	127.7	126.1	126.5	138.0	154.2	155.8	192.9	227.6	255.4	313.1
50-54. . . .	90.8	116.0	115.8	126.9	135.8	135.1	165.9	194.7	233.8	265.0
55-59. . . .	64.8	100.8	99.9	111.6	113.2	128.2	131.5	160.3	204.3	221.2
60-64. . . .	61.3	68.4	87.6	89.6	96.6	105.5	107.0	128.4	164.7	197.8
65-69. . . .	49.0	45.6	70.7	69.4	78.3	79.5	92.2	90.4	123.0	165.9
70-74. . . .	33.6	33.2	38.5	49.8	52.5	56.6	63.7	61.7	83.3	126.1
75-79. . . .	21.1	20.7	20.0	30.9	30.7	34.9	36.0	39.1	44.0	73.3
80-84. . . .	10.4	9.0	9.2	14.1	14.1	14.5	16.4	16.1	19.3	33.1
85 & + . . .	4.7	4.2	3.9	4.2	5.5	5.3	6.2	5.6	7.4	11.2
All ages — Tous âges.	2 163.5	2 271.9	2 419.5	2 758.6	3 026.8	3 324.8	3 680.6	3 641.4	4 007.4	4 199.8
	Percentages — Pourcentages									
0- 4. . . .	11.75	10.77	12.03	12.46	11.64	11.86	10.37	7.14	8.38	7.78
5- 9. . . .	11.07	9.87	10.48	11.19	10.92	10.43	10.43	8.80	8.70	6.37
10-14. . . .	10.02	9.79	9.23	10.10	10.44	9.77	10.12	9.59	6.30	7.00
15-19. . . .	9.12	9.54	8.83	9.29	9.94	9.74	9.36	10.00	8.15	7.80
20-24. . . .	9.14	8.86	8.44	8.39	9.22	9.17	8.61	9.39	8.92	8.28
25-29. . . .	7.62	7.90	7.87	7.11	7.63	8.31	8.27	8.02	9.15	7.34
30-34. . . .	7.00	7.48	6.99	6.36	6.78	7.28	7.66	7.46	8.38	6.34
35-39. . . .	6.67	6.65	6.40	6.34	5.78	6.34	7.00	7.34	7.15	7.73
40-44. . . .	6.19	6.07	6.08	5.76	5.16	5.60	6.12	6.88	6.56	7.85
45-49. . . .	5.90	5.55	5.23	5.00	5.09	4.69	5.24	6.25	6.37	7.45
50-54. . . .	4.20	5.11	4.79	4.60	4.49	4.06	4.51	5.35	5.84	6.31
55-59. . . .	3.00	4.44	4.13	4.05	3.74	3.86	3.57	4.40	5.10	5.27
60-64. . . .	2.83	3.01	3.62	3.25	3.19	3.17	2.91	3.53	4.11	4.71
65-69. . . .	2.26	2.01	2.92	2.51	2.59	2.39	2.51	2.48	3.07	3.95
70-74. . . .	1.55	1.46	1.69	1.81	1.73	1.70	1.73	1.69	2.08	3.00
75-79. . . .	0.98	0.91	0.83	1.12	1.01	1.05	0.98	1.07	1.10	1.75
80-84. . . .	0.48	0.40	0.38	0.51	0.47	0.44	0.45	0.44	0.48	0.79
85 & + . . .	0.22	0.18	0.16	0.15	0.18	0.16	0.17	0.15	0.18	0.27
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	32.84	30.43	31.74	33.75	33.00	32.06	30.92	25.53	23.38	21.15
15-44. . . .	45.74	46.50	44.61	43.25	44.51	46.44	47.02	49.09	48.31	45.34
45-64. . . .	15.93	18.11	17.77	16.90	16.51	15.78	16.23	19.53	21.42	23.74
65 & + . . .	5.49	4.96	5.88	6.10	5.98	5.74	5.84	5.83	6.91	9.76
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

11. BELGIUM (*continued*)

Tableau III (*suite*)

11. BELGIQUE (*suite*)

Age (in years) (en années)	Female — Féminin									
	1846	1856	1866	1880	1890	1900	1910	1920	1930	1947
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	250.7	243.7	289.5	339.0	350.8	389.6	377.7	253.8	331.6	314.3
5- 9. . . .	233.5	221.4	251.5	304.6	326.9	345.0	381.2	318.5	342.6	261.9
10-14. . . .	207.3	216.1	220.5	274.3	313.0	322.5	370.0	347.5	248.0	287.9
15-19. . . .	192.5	210.4	209.5	251.5	296.3	321.0	342.5	363.5	323.4	322.9
20-24. . . .	196.1	191.6	203.4	231.4	264.4	301.3	315.4	344.7	346.5	331.8
25-29. . . .	162.1	173.0	186.5	193.9	229.7	274.5	301.6	308.5	354.0	296.0
30-34. . . .	149.8	165.7	166.1	176.3	206.5	240.5	281.4	282.1	335.6	260.2
35-39. . . .	140.7	147.4	148.5	173.1	175.3	210.7	257.1	271.1	301.1	322.0
40-44. . . .	127.3	136.0	141.9	159.1	158.2	188.9	225.6	254.4	273.3	330.6
45-49. . . .	122.7	124.3	124.2	136.8	155.9	159.7	196.0	232.2	261.3	322.0
50-54. . . .	100.2	111.0	115.5	126.2	139.0	142.0	173.5	201.2	240.6	290.6
55-59. . . .	82.7	98.9	101.0	113.7	116.2	135.6	142.6	170.0	213.3	249.0
60-64. . . .	71.7	75.3	86.8	94.1	101.9	114.2	119.8	142.9	175.9	222.9
65-69. . . .	56.1	59.2	72.3	75.1	85.5	88.1	105.4	107.4	137.8	190.5
70-74. . . .	37.7	41.1	44.8	55.6	59.5	65.1	75.5	76.8	99.6	149.6
75-79. . . .	24.1	25.5	27.6	34.4	37.0	42.4	45.2	50.9	58.4	92.7
80-84. . . .	12.2	11.7	12.9	16.3	18.5	19.3	22.5	23.4	28.3	47.3
85 & + . . .	6.0	5.5	5.8	6.2	7.9	8.3	10.0	9.0	13.1	20.3
All ages — Tous âges.	2 173.4	2 257.8	2 408.3	2 761.6	3 042.5	3 368.7	3 743.0	3 757.9	4 084.4	4 312.5
	Percentages — Pourcentages									
0- 4. . . .	11.53	10.79	12.02	12.28	11.53	11.56	10.09	6.75	8.12	7.29
5- 9. . . .	10.74	9.81	10.44	11.03	10.74	10.24	10.19	8.48	8.39	6.07
10-14. . . .	9.54	9.57	9.15	9.93	10.29	9.57	9.89	9.25	6.07	6.68
15-19. . . .	8.86	9.32	8.70	9.11	9.74	9.53	9.15	9.67	7.92	7.49
20-24. . . .	9.02	8.49	8.45	8.38	8.69	8.94	8.43	9.17	8.49	7.69
25-29. . . .	7.46	7.66	7.74	7.02	7.55	8.15	8.06	8.21	8.67	6.86
30-34. . . .	6.89	7.34	6.90	6.38	6.79	7.14	7.52	7.51	8.22	6.03
35-39. . . .	6.47	6.53	6.17	6.27	5.76	6.25	6.87	7.21	7.37	7.47
40-44. . . .	5.86	6.02	5.89	5.76	5.20	5.61	6.03	6.77	6.69	7.67
45-49. . . .	5.65	5.50	5.16	4.95	5.12	4.74	5.24	6.18	6.40	7.47
50-54. . . .	4.61	4.92	4.80	4.57	4.57	4.21	4.64	5.35	5.89	6.74
55-59. . . .	3.81	4.38	4.19	4.12	3.82	4.02	3.81	4.52	5.22	5.77
60-64. . . .	3.30	3.34	3.60	3.41	3.35	3.39	3.20	3.80	4.31	5.17
65-69. . . .	2.58	2.62	3.00	2.72	2.81	2.61	2.82	2.86	3.37	4.42
70-74. . . .	1.73	1.82	1.86	2.01	1.95	1.93	2.02	2.04	2.44	3.47
75-79. . . .	1.11	1.13	1.15	1.25	1.22	1.26	1.21	1.35	1.43	2.15
80-84. . . .	0.56	0.52	0.54	0.59	0.61	0.57	0.60	0.62	0.69	1.10
85 & + . . .	0.28	0.24	0.24	0.22	0.26	0.25	0.27	0.24	0.32	0.47
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	31.81	30.17	31.61	33.24	32.56	31.37	30.17	24.48	22.58	20.04
15-44. . . .	44.56	45.36	43.85	42.92	43.73	45.62	46.06	48.54	47.36	43.21
45-64. . . .	17.37	18.14	17.75	17.05	16.86	16.36	16.89	19.85	21.82	25.15
65 & + . . .	6.26	6.33	6.79	6.79	6.85	6.62	6.92	7.11	8.25	11.61
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(Table III (*continued*)

11. BELGIUM (*concluded*)

Tableau III (*suite*)

11. BELGIQUE (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes									
	1846	1856	1866	1880	1890	1900	1910	1920	1930	1947
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	505.0	488.5	580.5	682.6	703.3	783.8	759.5	513.9	667.5	641.1
5- 9. . . .	473.1	445.7	505.0	613.2	657.3	691.8	765.0	639.0	691.3	529.6
10-14. . . .	424.0	438.5	444.0	552.9	629.0	647.2	742.4	696.8	500.4	581.7
15-19. . . .	389.9	427.2	423.2	507.9	597.0	644.8	686.9	727.7	649.9	650.6
20-24. . . .	393.9	392.8	407.6	463.0	543.6	605.9	632.3	686.6	703.7	679.6
25-29. . . .	326.8	352.5	376.9	390.0	460.6	550.9	606.1	600.6	720.4	604.1
30-34. . . .	301.2	335.5	335.2	351.7	411.6	482.4	563.5	553.6	671.5	526.6
35-39. . . .	285.0	298.4	303.4	348.0	350.2	421.4	514.7	538.5	587.5	646.8
40-44. . . .	261.3	274.0	289.1	317.9	314.5	375.1	451.0	504.9	536.1	660.3
45-49. . . .	250.4	250.4	250.7	274.7	310.1	315.5	388.9	459.8	516.7	635.2
50-54. . . .	191.1	227.0	231.3	253.1	274.8	277.1	339.4	395.9	474.4	555.7
55-59. . . .	147.5	199.7	201.0	225.3	229.4	263.8	274.1	330.3	417.6	470.2
60-64. . . .	133.0	143.6	174.4	183.7	198.5	219.7	226.8	271.3	340.6	420.8
65-69. . . .	105.1	104.8	143.0	144.5	163.8	167.6	197.6	197.8	260.8	356.5
70-74. . . .	71.3	74.3	83.2	105.3	112.1	121.7	139.2	138.5	182.9	275.7
75-79. . . .	45.3	46.2	47.6	65.3	67.8	77.3	81.2	90.0	102.4	165.9
80-84. . . .	22.6	20.7	22.1	30.4	32.6	33.9	38.9	39.5	47.6	80.4
85& + . . .	10.7	9.7	9.7	10.4	13.4	13.6	16.2	14.6	20.5	31.5
All ages — Tous âges.	4 337.2	4 529.5	4 827.9	5 519.9	6 069.6	6 693.5	7 423.6	7 399.3	8 091.8	8 512.3
	Percentages — Pourcentages									
0- 4. . . .	11.64	10.79	12.02	12.37	11.59	11.71	10.23	6.94	8.25	7.53
15- 9. . . .	10.91	9.84	10.46	11.11	10.83	10.34	10.30	8.63	8.54	6.22
10-14. . . .	9.78	9.68	9.20	10.02	10.36	9.67	10.00	9.41	6.18	6.83
15-19. . . .	8.99	9.43	8.77	9.20	9.83	9.63	9.25	9.83	8.03	7.64
20-24. . . .	9.08	8.67	8.44	8.39	8.96	9.05	8.52	9.28	8.70	7.99
25-29. . . .	7.54	7.78	7.81	7.06	7.59	8.23	8.16	8.11	8.90	7.10
30-34. . . .	6.94	7.41	6.94	6.37	6.78	7.21	7.59	7.48	8.30	6.19
35-39. . . .	6.57	6.59	6.29	6.30	5.77	6.30	6.93	7.28	7.26	7.60
40-44. . . .	6.03	6.05	5.99	5.76	5.18	5.60	6.07	6.82	6.63	7.76
45-49. . . .	5.77	5.53	5.19	4.98	5.11	4.71	5.24	6.21	6.39	7.46
50-54. . . .	4.41	5.01	4.79	4.58	4.53	4.14	4.57	5.35	5.86	6.53
55-59. . . .	3.40	4.41	4.16	4.08	3.78	3.94	3.69	4.46	5.16	5.52
60-64. . . .	3.07	3.17	3.61	3.33	3.27	3.28	3.05	3.67	4.21	4.94
65-69. . . .	2.42	2.31	2.96	2.62	2.70	2.50	2.66	2.67	3.22	4.19
70-74. . . .	1.64	1.64	1.72	1.91	1.84	1.82	1.88	1.87	2.26	3.24
75-79. . . .	1.04	1.02	0.99	1.18	1.12	1.15	1.09	1.22	1.27	1.95
80-84. . . .	0.52	0.46	0.46	0.55	0.54	0.51	0.52	0.53	0.59	0.94
85& + . . .	0.25	0.21	0.20	0.19	0.22	0.20	0.22	0.20	0.25	0.37
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	32.33	30.31	31.68	33.50	32.78	31.72	30.53	24.98	22.97	20.58
15-44. . . .	45.15	45.93	44.24	43.08	44.11	46.02	46.52	48.80	47.82	44.28
45-64. . . .	16.65	18.12	17.75	16.97	16.69	16.07	16.55	19.69	21.62	24.45
65& + . . .	5.87	5.64	6.33	6.45	6.42	6.18	6.37	6.49	7.59	10.69
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1846, 1856, 1866, 1880, 1890 : J. Bertillon, *Statistique internationale...*

1900 : *Annuaire international de statistique...*

1910, 1920, 1930 : *Le mouvement naturel...*

1947 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

12. BULGARIA

Tableau III (*suite*)

12. BULGARIE

Age (in years) (en années)	*Male — Masculin*				
	1893	*1900*	*1905*	*1920*	*1934*
	Numbers in 000's — Nombres en milliers				
0- 4	246.1	275.9	294.9	253.6	364.1
5- 9	259.3	246.8	269.3	315.2	367.5
10-14	197.7	238.5	239.1	329.8	369.7
15-19	145.8	208.4	209.5	270.4	224.5
20-24	109.4	136.9	182.1	212.7	289.9
25-29	99.8	120.7	133.6	165.4	271.7
30-34	84.8	109.3	113.6	138.0	235.6
35-39	104.1	108.1	117.8	151.3	189.9
40-44	85.1	82.3	84.8	108.1	143.7
45-49	84.5	81.8	81.4	95.3	137.0
50-54	67.7	66.2	64.7	87.1	128.7
55-59	54.0	68.0	83.6	83.0	93.8
60-64	52.7	64.1	67.0	66.8	76.3
65-69	30.3	37.8	44.7	51.2	62.9
70-74	27.7	30.7	33.8	41.0	46.5
75-79	12.6	12.2	15.3	21.1	25.1
80-84	14.5	12.3	12.6	16.6	15.3
85 &	12.0	9.4	9.3	12.9	11.3
All ages — Tous âges	1 688.1	1 909.4	2 057.1	2 419.5	3 053.5
	Percentages — Pourcentages				
0- 4	14.58	14.45	14.34	10.48	11.93
5- 9	16.36	12.92	13.09	13.03	12.04
10-14	11.71	12.49	11.62	13.63	12.11
15-19	8.64	10.92	10.19	11.18	7.35
20-24	6.48	7.17	8.85	8.79	9.50
25-29	5.91	6.32	6.50	6.84	8.90
30-34	5.02	5.73	5.52	5.70	7.71
35-39	6.17	5.66	5.73	6.25	6.22
40-44	5.04	4.31	4.12	4.47	4.70
45-49	5.01	4.28	3.96	3.94	4.49
50-54	4.01	3.47	3.15	3.60	4.21
55-59	3.20	3.56	4.06	3.43	3.07
60-64	3.12	3.36	3.26	2.76	2.50
65-69	1.79	1.98	2.17	2.12	2.06
70-74	1.64	1.61	1.64	1.69	1.52
75-79	0.75	0.64	0.74	0.87	0.82
80-84	0.86	0.64	0.61	0.69	0.50
85 & +	0.71	0.49	0.45	0.53	0.37
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	41.65	39.86	39.05	37.14	36.08
15-44	37.26	40.11	40.91	43.23	44.38
45-64	15.34	14.67	14.43	13.73	14.27
65 & +	5.75	5.36	5.61	5.90	5.27
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

12. BULGARIA (*continued*)

Tableau III (*suite*)

12. BULGARIE (*suite*)

Age (in years) (en années)	*Female — Féminin*				
	1893	*1900*	*1905*	*1920*	*1934*
	Numbers in 000's — Nombres en milliers				
0- 4	238.9	269.8	289.7	242.3	350.0
5- 9	250.8	244.7	264.3	303.4	352.7
10-14	186.4	229.2	231.7	311.8	355.0
15-19	142.5	202.0	207.1	268.4	218.0
20-24	111.4	131.9	175.5	221.5	282.7
25-29	104.7	123.5	132.7	178.0	265.5
30-34	96.6	110.0	113.8	162.8	232.0
35-39	94.1	93.9	101.0	159.8	192.3
40-44	83.2	85.1	86.5	117.2	154.1
45-49	68.4	71.3	74.8	96.2	154.0
50-54	63.3	72.9	77.5	91.6	134.8
55-59	41.7	52.8	61.5	70.6	96.8
60-64	47.5	57.9	62.7	70.4	79.8
65-69	24.0	28.1	33.5	44.6	58.7
70-74	27.1	29.0	31.5	40.6	46.1
75-79	11.0	10.2	12.6	18.0	24.3
80-84	14.9	12.7	12.7	16.6	15.7
85 & +	11.4	9.5	9.6	11.6	11.2
All ages — Tous âges	1 617.9	1 834.5	1 978.7	2 425.4	3 023.7
	Percentages — Pourcentages				
0- 4	14.76	14.70	14.64	9.99	11.58
5- 9	15.50	13.34	13.36	12.51	11.67
10-14	11.52	12.49	11.71	12.86	11.74
15.19	8.81	11.01	10.46	11.07	7.21
20-24	6.88	7.19	8.87	9.13	9.35
25-29	6.47	6.73	6.71	7.34	8.78
30-34	5.97	6.00	5.75	6.71	7.67
35-39	5.82	5.12	5.10	6.59	6.36
40-44	5.14	4.64	4.37	4.83	5.10
45-49	4.23	3.89	3.78	3.97	5.09
50-54	3.91	3.97	3.92	3.78	4.46
55-59	2.58	2.88	3.11	2.91	3.20
60-64	2.94	3.16	3.17	2.90	2.64
65-69	1.48	1.53	1.69	1.84	1.94
70-74	1.67	1.58	1.59	1.67	1.52
75-79	0.68	0.56	0.64	0.74	0.80
80-84	0.92	0.69	0.64	0.68	0.52
85 & +	0.70	0.52	0.49	0.48	0.37
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	41.78	40.53	39.71	35.36	34.99
15-44	39.09	40.69	41.26	45.67	44.47
45-64	13.66	13.90	13.98	13.56	15.39
65 & +	5.45	4.88	5.05	5.41	5.15
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Table III (*continued*) **Tableau III** (*suite*)

12. BULGARIA (*concluded*) 12. BULGARIE (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*				
	1893	*1900*	*1905*	*1920*	*1934*
	Numbers in 000's — Nombres en milliers				
0- 4	485.0	545.7	584.6	495.9	714.1
5- 9	510.1	491.5	533.6	618.6	720.2
10-14	384.1	467.7	470.7	641.6	724.7
15-19	288.2	410.4	416.6	538.8	442.5
20-24	220.8	268.7	357.6	434.2	572.6
25-29	204.5	244.2	266.3	343.4	537.1
30-34	181.4	219.3	227.4	300.8	467.5
35-39	198.2	202.0	218.8	311.1	382.2
40-44	168.3	167.3	171.3	225.3	297.8
45-49	153.0	153.1	156.2	191.5	291.0
50-54	131.0	139.1	142.2	178.7	263.4
55-59	95.7	120.8	145.1	153.6	190.6
60-64	100.3	122.0	129.6	137.2	156.2
65-69	54.4	65.9	78.2	95.8	121.5
70-74	54.8	59.7	65.3	81.6	92.6
75-79	23.6	22.3	27.8	39.1	49.4
80-84	29.4	25.0	25.2	33.2	31.0
85 & +	23.4	19.0	18.9	24.5	22.4
All ages — Tous âges	3 306.2	3 743.7	4 035.4	4 844.9	6 076.8
	Percentages — Pourcentages				
0- 4	14.67	14.58	14.49	10.24	11.75
5- 9	15.43	13.13	13.22	12.77	11.85
10-14	11.62	12.49	11.67	13.24	11.93
15-19	8.72	10.96	10.32	11.12	7.28
20-24	6.68	7.18	8.86	8.96	9.42
25-29	6.18	6.52	6.60	7.09	8.84
30-34	5.49	5.86	5.64	6.21	7.69
35-39	5.99	5.39	5.42	6.42	6.29
40-44	5.09	4.47	4.24	4.65	4.90
45-49	4.63	4.09	3.87	3.95	4.79
50-54	3.96	3.71	3.52	3.69	4.34
55-59	2.89	3.23	3.60	3.17	3.14
60-64	3.03	3.26	3.21	2.83	2.57
65-69	1.65	1.76	1.94	1.98	2.00
70-74	1.66	1.59	1.62	1.68	1.52
75-79	0.71	0.60	0.69	0.81	0.81
80-84	0.89	0.67	0.62	0.69	0.51
85 & +	0.71	0.51	0.47	0.50	0.37
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	41.72	40.20	39.38	36.25	35.53
15-44	38.15	40.38	41.08	44.45	44.42
45-64	14.51	14.29	14.20	13.64	14.84
65 & +	5.62	5.13	5.34	5.66	5.21
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Sources : 1893 : J. Bertillon, *Statistique internationale...*
1900, 1905 : *Annuaire international de statistique...*
1920 : *Le mouvement naturel...*
1934 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

13. DENMARK

Tableau III (*suite*)

13. DANEMARK

Age (in years) (en années)	1850	1860	1870	1880	1890	1901	1911	1921	1935	1945
					Male — Masculin					
					Numbers in 000's — Nombres en milliers					
0- 4. . . .	86.7	106.1	112.1	127.7	140.1	153.5	167.8	172.6	151.7	197.5
5- 9. . . .	77.6	89.1	96.6	108.3	127.2	136.3	152.6	169.5	155.7	160.1
10-14. . . .	70.6	76.8	92.0	100.0	114.9	128.4	144.9	169.9	168.4	149.6
15-19. . . .	63.9	73.2	83.2	88.9	97.7	118.8	127.0	155.9	162.9	152.7
20-24. . . .	55.4	66.4	70.2	81.4	80.5	100.2	107.6	137.1	162.7	162.2
25-29. . . .	58.1	60.0	65.0	71.5	71.3	85.0	98.7	118.6	158.5	157.4
30-34. . . .	52.2	55.3	58.4	61.0	70.3	74.7	92.1	108.9	143.3	161.0
35-39. . . .	45.4	56.5	55.7	57.5	63.9	66.6	80.1	101.7	129.9	154.4
40-44. . . .	39.0	48.1	50.9	52.2	54.3	65.9	70.0	93.4	115.1	139.1
45-49. . . .	38.0	39.3	49.9	47.5	51.6	57.5	61.0	80.0	102.5	124.4
50-54. . . .	29.5	33.1	42.1	43.5	45.5	50.1	59.0	68.4	93.8	107.4
55-59. . . .	24.1	30.6	32.5	40.9	39.3	43.5	49.6	57.1	82.5	93.9
60-64. . . .	17.8	22.0	25.5	32.9	33.7	36.7	40.9	52.0	66.6	80.7
65-69. . . .	14.7	16.4	21.1	22.8	29.9	29.3	32.7	40.6	50.9	66.5
70-74. . . .	10.2	10.0	13.1	15.1	20.4	21.0	23.7	29.2	35.8	45.8
75-79. . . .	5.6	6.3	7.7	9.8	10.9	14.2	15.1	18.7	24.5	27.9
80-84. . . .	2.5	2.9	3.2	4.0	4.9	6.5	7.0	9.2	16.9	13.2
85 & + . . .	1.0	1.0	1.3	1.6	2.1	2.1	3.2	3.9		6.2
All ages — Tous âges.	692.3	793.1	880.5	966.6	1 058.5	1 190.3	1 333.0	1 586.7	1 821.7	2 000.0
					Percentages — Pourcentages					
0- 4. . . .	12.52	13.38	12.73	13.21	13.23	12.90	12.59	10.88	8.33	9.88
5- 9. . . .	11.21	11.23	10.97	11.20	12.01	11.45	11.45	10.68	8.54	8.01
10-14. . . .	10.20	9.68	10 45	10.35	10.85	10.79	10.87	10.71	9.24	7.48
15-19. . . .	9.23	9.23	9.45	9.20	9.23	9.98	9.53	9.82	8.94	7.64
20-24. . . .	8.00	8.37	7.97	8.42	7.60	8.42	8.07	8.64	8.93	8.11
25-29. . . .	8.39	7.57	7.38	7.40	6.73	7.14	7.40	7.47	8.70	7.87
30-34. . . .	7.54	6.97	6.63	6.31	6.64	6.28	6.91	6.86	7.86	8.05
35-39. . . .	6.56	7.12	6.33	5.95	6.03	5.60	6.01	6.41	7.13	7.72
40-44. . . .	5.63	6.06	5.78	5.40	5.13	5.54	5.25	5.89	6.32	6.96
45-49. . . .	5.49	4.96	5.67	4.91	4.87	4.83	4.58	5.04	5.63	6.22
50-54. . . .	4.26	4.17	4.78	4.50	4.30	4.21	4.43	4.31	5.15	5.37
55-59. . . .	3.48	3.86	3.69	4.23	3.71	3.66	3.72	3.60	4.53	4.70
60-64. . . .	2.57	2.77	2.90	3.40	3.18	3.08	3.07	3.28	3.66	4.04
65-69. . . .	2.12	2.07	2.40	2.36	2.82	2.46	2.45	2.56	2.79	3.33
70-74. . . .	1.47	1.26	1.49	1.56	1.93	1.76	1.78	1.84	1.96	2.29
75-79. . . .	0.81	0.80	0.87	1.01	1.03	1.19	1.13	1.18	1.34	1.40
80-84. . . .	0.36	0.37	0.36	0.41	0.46	0.55	0.53	0.58	0.93	0.66
85 & + . . .	0.14	0.13	0.15	0.17	0.20	0.18	0.24	0.25		0.31
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
					Summary — Résumé					
0-14. . . .	33.93	34.29	34.15	34.76	36.09	35.14	34.91	32.27	26.11	25.37
15-44. . . .	45.35	45.32	43.54	42.68	41.36	42.96	43.17	45.09	47.88	46.35
45-64. . . .	15.80	15.76	17.04	17.04	16.06	15.78	15.80	16.23	18.97	20.33
65 & + . . .	4.90	4.63	5.27	5.51	6.44	6.14	6.13	6.41	7.02	7.99
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

13. DENMARK (*continued*)

Tableau III (*suite*)

13. DANEMARK (*suite*)

Age (in years) (en années)	*Female — Féminin*									
	1850	*1860*	*1870*	*1880*	*1890*	*1901*	*1911*	*1921*	*1935*	*1945*
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	86.3	104.4	109.9	125.0	137.5	151.6	165.5	168.9	147.5	189.9
5- 9. . . .	75.7	87.1	94.0	106.1	124.4	133.7	149.9	167.2	152.3	154.8
10-14. . . .	68.8	75.7	90.9	97.7	111.7	125.8	143.2	167.9	165.2	144.9
15-19. . . .	62.7	71.9	82.2	87.7	97.4	118.1	127.4	156.0	160.5	150.0
20-24. . . .	62.7	69.1	74.4	86.9	90.1	106.1	118.6	147.8	163.9	163.9
25-29. . . .	62.7	60.6	68.2	76.0	81.3	92.4	109.9	130.3	163.0	158.8
30-34. . . .	52.7	56.0	62.1	66.0	77.8	83.1	99.7	119.1	149.5	162.0
35-39. . . .	45.0	56.4	56.5	60.7	67.8	74.5	85.9	109.6	139.2	157.2
40-44. . . .	39.3	48.0	51.5	55.2	58.6	72.7	77.4	99.2	122.3	144.6
45-49. . . .	38.7	40.2	50.7	49.1	54.4	61.8	68.6	84.3	110.0	132.6
50-54. . . .	31.0	34.7	43.4	45.3	49.5	54.7	66.1	75.3	99.6	114.7
55-59. . . .	26.3	32.0	34.3	43.1	42.0	47.6	54.9	64.3	86.6	101.1
60-64. . . .	20.6	24.5	28.6	36.0	36.8	41.5	46.7	60.2	70.3	87.5
65-69. . . .	17.9	20.0	24.4	26.7	34.0	34.0	37.8	46.5	57.4	70.7
70-74. . . .	12.1	12.5	15.8	18.6	24.3	24.6	29.0	34.9	42.1	50.3
75-79. . . .	7.3	8.3	10.1	12.6	14.3	18.0	18.8	22.4	29.2	32.7
80-84. . . .	3.6	4.3	4.6	5.7	7.0	9.1	9.6	11.9	21.5	16.7
85& + . . .	1.7	1.7	2.3	2.7	3.5	3.7	5.4	5.8		8.3
All ages — Tous âges.	715.1	807.4	903.9	1 001.0	1 112.4	1 253.0	1 414.4	1 671.6	1 880.1	2 040.7
	Percentages — Pourcentages									
0- 4. . . .	12.07	12.93	12.16	12.49	12.36	12.10	11.70	10.10	7.85	9.31
5- 9. . . .	10.59	10.79	10.40	10.60	11.19	10.67	10.60	10.00	8.10	7.59
10-14. . . .	9.62	9.38	10.06	9.76	10.04	10.04	10.13	10.04	8.79	7.10
15-19. . . .	8.77	8.91	9.09	8.76	8.76	9.43	9.01	9.33	8.54	7.35
20-24. . . .	8.77	8.56	8.23	8.68	8.10	8.47	8.39	8.84	8.72	8.03
25-29. . . .	8.77	7.51	7.55	7.59	7.31	7.37	7.77	7.79	8.67	7.78
30-34. . . .	7.37	6.94	6.87	6.59	7.00	6.63	7.05	7.12	7.95	7.94
35-39. . . .	6.29	6.99	6.25	6.06	6.10	5.95	6.07	6.56	7.40	7.70
40-44. . . .	5.50	5.95	5.70	5.51	5.27	5.80	5.47	5.93	6.51	7.09
45-49. . . .	5.41	4.98	5.61	4.91	4.89	4.93	4.85	5.04	5.85	6.50
50-54. . . .	4.34	4.30	4.80	4.53	4.45	4.37	4.67	4.50	5.30	5.62
55-59. . . .	3.68	3.96	3.79	4.31	3.78	3.80	3.88	3.85	4.61	4.95
60-64. . . .	2.88	3.03	3.16	3.60	3.31	3.31	3.30	3.60	3.74	4.29
65-69. . . .	2.50	2.48	2.70	2.67	3.06	2.71	2.67	2.78	3.05	3.46
70-74. . . .	1.69	1.55	1.75	1.86	2.19	1.96	2.05	2.09	2.24	2.46
75-79. . . .	1.02	1.03	1.12	1.26	1.29	1.44	1.33	1.34	1.55	1.60
80-84. . . .	0.50	0.53	0.51	0.57	0.63	0.73	0.68	0.71	1.14	0.82
85& + . . .	0.24	0.21	0.25	0.27	0.31	0.30	0.38	0.35		0.41
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	32.28	33.10	32.62	32.85	33.59	32.81	32.43	30.14	24.74	24.00
15-44. . . .	45.47	44.86	43.69	43.19	42.54	43.65	43.76	45.57	47.79	45.89
45-64. . . .	16.31	16.27	17.36	17.35	16.43	16.41	16.70	16.99	19.50	21.36
65& + . . .	5.95	5.80	6.33	6.63	7.48	7.14	7.11	7.27	7.98	8.75
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

13. DENMARK (*concluded*)

Tableau III (*suite*)

13. DANEMARK (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes									
	1850	*1860*	*1870*	*1880*	*1890*	*1901*	*1911*	*1921*	*1935*	*1945*
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	173.0	210.5	222.0	252.7	277.6	305.1	333.3	341.5	299.2	387.4
5- 9. . . .	153.4	176.3	190.6	214.4	251.6	270.0	302.5	336.7	308.0	314.8
10-14. . . .	139.4	152.5	182.9	197.7	226.5	254.2	288.1	337.8	333.6	294.6
15-19. . . .	126.7	145.1	165.4	176.6	195.1	236.9	254.4	311.9	323.4	302.7
20-24. . . .	118.1	135.5	144.5	168.3	170.6	206.3	226.1	284.9	326.6	326.2
25-29. . . .	120.8	120.6	133.2	147.5	152.7	177.5	208.6	248.9	321.5	316.2
30-34. . . .	104.9	111.4	120.5	127.0	148.1	157.8	191.8	228.0	292.8	323.1
35-39. . . .	90.4	112.9	112.2	118.1	131.7	141.0	166.0	211.3	269.1	311.6
40-44. . . .	78.3	96.1	102.5	107.5	112.9	138.5	147.4	192.6	237.4	283.7
45-49. . . .	76.7	79.5	100.6	96.6	106.0	119.3	129.6	164.3	212.5	257.0
50-54. . . .	60.5	67.9	85.5	88.7	95.0	104.8	125.1	143.7	193.4	222.1
55-59. . . .	50.4	62.6	66.8	84.0	81.3	91.1	104.4	121.4	169.1	195.0
60-64. . . .	38.4	46.5	54.1	68.9	70.5	78.2	87.6	112.2	136.9	168.2
65-69. . . .	32.6	36.2	45.5	49.5	63.9	63.3	70.5	87.1	108.3	137.3
70-74. . . .	22.3	22.5	28.9	33.7	44.7	45.6	52.6	64.1	77.9	96.0
75-79. . . .	12.9	14.6	17.8	22.4	25.2	32.2	33.9	41.4	53.7	60.6
80-84. . . .	6.2	7.2	7.9	9.7	11.9	15.6	16.6	21.1	38.4	29.9
85& + . . .	2.7	2.7	3.6	4.3	5.6	5.8	8.6	9.7		14.5
All ages — Tous âges.	1 407.7	1 600.6	1 784.5	1 967.6	2 170.9	2 443.2	2 747.1	3 258.3	3 701.8	4 040.9
	Percentages — Pourcentages									
0- 4. . . .	12.29	13.15	12.44	12.84	12.79	12.49	12.13	10.48	8.08	9.59
5- 9. . . .	10.89	11.01	10.68	10.89	11.59	11.05	11.01	10.33	8.32	7.79
10-14. . . .	9.90	9.52	10.25	10.05	10.43	10.40	10.49	10.37	9.01	7.29
15-19. . . .	9.00	9.06	9.27	8.97	8.99	9.70	9.26	9.57	8.74	7.49
20-24. . . .	8.39	8.46	8.09	8.55	7.86	8.44	8.23	8.74	8.82	8.07
25-29. . . .	8.58	7.53	7.46	7.49	7.03	7.27	7.59	7.64	8.68	7.83
30-34. . . .	7.45	6.96	6.75	6.45	6.82	6.46	6.98	7.00	7.91	8.00
35-39. . . .	6.42	7.05	6.28	6.00	6.07	5.77	6.04	6.48	7.27	7.71
40-44. . . .	5.56	6.00	5.74	5.46	5.20	5.67	5.37	5.91	6.41	7.02
45-49. . . .	5.45	4.97	5.63	4.91	4.88	4.88	4.72	5.04	5.74	6.36
50-54. . . .	4.30	4.24	4.79	4.51	4.38	4.29	4.55	4.41	5.22	5.50
55-59. . . .	3.58	3.91	3.74	4.27	3.74	3.73	3.80	3.73	4.57	4.83
50-64. . . .	2.73	2.90	3.03	3.50	3.25	3.20	3.19	3.44	3.70	4.16
65-69. . . .	2.32	2.26	2.55	2.52	2.94	2.59	2.57	2.67	2.93	3.40
70-74. . . .	1.58	1.41	1.62	1.71	2.06	1.87	1.91	1.97	2.10	2.38
75-79. . . .	0.92	0.91	1.00	1.14	1.16	1.32	1.23	1.26	1.45	1.50
80-84. . . .	0.44	0.45	0.44	0.49	0.55	0.64	0.60	0.65	1.04	0.74
85& + . . .	0.19	0.17	0.20	0.22	0.26	0.24	0.31	0.30		0.36
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	33.08	33.68	33.37	33.78	34.81	33.94	33.63	31.18	25.41	24.67
15-44. . . .	45.40	45.06	43.59	42.92	41.97	43.31	43.47	45.34	47.83	46.12
45-64. . . .	16.06	16.02	17.19	17.19	16.25	16.10	16.26	16.62	19.23	20.85
65& + . . .	5.45	5.20	5.81	6.08	6.97	6.66	6.62	6.85	7.52	8.38
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1850, 1860, 1870, 1880, 1890 : J. Bertillon, *Statistique internationale...*
1901, 1911 : *Annuaire international de statistique...*
1921, 1935 : *Le mouvement naturel...*
1945 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

14. FRANCE

Tableau III (*suite*)

14. FRANCE

Age (In years) (en années)	Male — Masculin									
	1851	1861	1872	1881	1891	1901	1911	1921	1931	1950
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	1 682.9	1 824.5	1 697.0	1 741.6	1 667.3	1 786.5	1 744.2	1 212.1	1 815.4	1 858
5- 9. . . .	1 676.3	1 648.3	1 658.6	1 715.4	1 677.4	1 604.8	1 667.3	1 503.3	1 786.5	1 376
10-14. . . .	1 602.3	1 638.6	1 597.8	1 589.5	1 669.6	1 618.2	1 657.4	1 710.6	1 183.3	1 380
15-19. . . .	1 593.9	1 631.3	1 530.1	1 630.8	1 669.5	1 629.9	1 588.6	1 729.2	1 536.4	1 572
20-24. . . .	1 454.1	1 498.7	1 509.3	1 631.8	1 586.0	1 560.7	1 530.9	1 405.2	1 716.1	1 687
25-29. . . .	1 434.8	1 459.7	1 291.4	1 295.1	1 478.2	1 495.8	1 518.1	1 230.9	1 793.4	1 710
30-34. . . .	1 352.9	1 398.9	1 276.8	1 315.6	1 372.2	1 375.5	1 476.9	1 251.5	1 619.4	1 085
35-39. . . .	1 294.1	1 338.3	1 248.5	1 281.9	1 280.4	1 332.1	1 394.8	1 272.6	1 255.1	1 400
40-44. . . .	1 184.8	1 249.0	1 169.3	1 204.4	1 190.1	1 223.0	1 265.1	1 315.2	1 222.5	1 546
45-49. . . .	1 053.8	1 153.9	1 097.5	1 106.9	1 146.8	1 107.2	1 187.8	1 269.9	1 178.8	1 527
50-54. . . .	1 039.6	1 008.1	983.5	1 008.3	1 017.8	998.1	1 053.8	1 131.0	1 168.7	1 305
55-59. . . .	738.1	834.4	889.6	891.5	881.4	916.9	909.2	1 014.4	1 070.7	946
60-64. . . .	591.0	769.8	747.7	781.6	788.5	778.9	761.3	845.3	886.5	854
65-69. . . .	469.7	509.9	533.6	604.6	612.6	598.9	629.2	643.7	711.2	731
70-74. . . .	333.7	325.5	406.7	427.9	450.0	445.1	687.5	720.5	774.9	589
75-79. . . .	170.9	193.8	217.5	250.3	270.1	250.6				386
80-84. . . .	73.3	83.1	81.5	123.6	118.6	108.8	145.9	153.4	162.7	178
85& + . . .	30.7	30.8	31.3	49.9	46.3	33.9				70
All ages — Tous âges.	17 776.9	18 605.5	17 967.7	18 650.7	18 922.8	18 864.9	19 218.0	18 408.8	19 881.6	20 200
	Percentages — Pourcentages									
0- 4. . . .	9.47	9.81	9.44	9.34	8.81	9.47	9.07	6.58	9.13	9.20
5- 9. . . .	9.43	8.85	9.23	9.20	8.86	8.51	8.67	8.16	8.99	6.81
10-14. . . .	9.01	8.81	8.89	8.52	8.83	8.58	8.62	9.29	5.95	6.83
15-19. . . .	8.97	8.76	8.51	8.75	8.83	8.64	8.27	9.39	7.73	7.78
20-24. . . .	8.18	8.05	8.40	8.75	8.38	8.28	7.97	7.63	8.63	8.35
25-29. . . .	8.07	7.85	7.18	6.94	7.81	7.93	7.90	6.69	9.02	8.47
30-34. . . .	7.61	7.52	7.11	7.06	7.25	7.29	7.68	6.80	8.14	5.37
35-39. . . .	7.28	7.19	6.95	6.87	6.76	7.06	7.26	6.91	6.31	6.93
40-44. . . .	6.66	6.71	6.51	6.46	6.29	6.48	6.58	7.14	6.15	7.65
45-49. . . .	5.93	6.20	6.11	5.93	6.06	5.87	6.18	6.90	5.93	7.56
50-54. . . .	5.85	5.42	5.47	5.40	5.38	5.29	5.48	6.14	5.88	6.46
55-59. . . .	4.15	4.53	4.95	4.78	4.66	4.86	4.73	5.51	5.39	4.68
60-64. . . .	3.32	4.14	4.16	4.19	4.17	4.13	3.96	4.59	4.46	4.23
65-69. . . .	2.64	2.74	2.97	3.24	3.24	3.18	3.27	3.50	3.58	3.62
70-74. . . .	1.88	1.75	2.26	2.29	2.38	2.36	3.58	3.91	3.90	2.92
75-79. . . .	0.96	1.04	1.21	1.34	1.43	1.33				1.91
80-84. . . .	0.41	0.45	0.45	0.66	0.63	0.58	0.76	0.82	0.82	0.88
85& + . . .	0.17	0.17	0.17	0.27	0.24	0.18				0.35
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	27.91	27.47	27.56	27.06	26.50	26.56	26.36	24.03	24.07	22.84
15-44. . . .	46.77	46.08	44.66	44.83	45.32	45.68	45.66	44.56	45.98	44.55
46-64. . . .	19.25	20.29	20.69	20.30	20.27	20.15	20.35	23.14	21.66	22.93
65& + . . .	6.06	6.15	7.06	7.80	7.92	7.63	7.61	8.23	8.30	9.68
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

14. FRANCE (*continued*)

Tableau III (*suite*)

14. FRANCE (*suite*)

Age (in years) (en années)	*Female — Féminin*									
	1851	*1861*	*1872*	*1881*	*1891*	*1901*	*1911*	*1921*	*1931*	*1950*
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	1 638.8	1 787.6	1 655.0	1 711.7	1 654.8	1 788.4	1 720.8	1 186.2	1 797.7	1 788
5- 9. . . .	1 618.9	1 624.6	1 609.3	1 686.8	1 676.5	1 608.2	1 651.7	1 497.8	1 720.2	1 335
10-14. . . .	1 544.1	1 596.8	1 543.0	1 552.6	1 654.7	1 609.0	1 635.1	1 695.6	1 145.4	1 361
15-19. . . .	1 554.3	1 616.5	1 517.5	1 613.2	1 670.4	1 636.8	1 591.2	1 716.8	1 514.7	1 530
20-24. . . .	1 522.9	1 576.0	1 663.3	1 748.0	1 692.9	1 612.8	1 564.7	1 638.7	1 662.2	1 609
25-29. . . .	1 432.7	1 473.2	1 313.3	1 255.5	1 442.5	1 506.9	1 548.0	1 551.9	1 694.3	1 639
30-34. . . .	1 352.0	1 371.2	1 265.2	1 292.5	1 343.0	1 402.1	1 493.9	1 511.5	1 643.0	1 064
35-39. . . .	1 275.8	1 311.2	1 236.7	1 254.1	1 264.7	1 342.3	1 400.2	1 495.8	1 529.7	1 405
40-44. . . .	1 173.7	1 223.8	1 159.9	1 189.1	1 211.1	1 235.4	1 296.7	1 439.3	1 455.1	1 548
45-49. . . .	1 044.7	1 143.8	1 098.5	1 121.3	1 149.4	1 124.0	1 220.4	1 330.1	1 398.6	1 537
50-54. . . .	1 027.7	1 000.8	990.9	1 035.7	1 030.4	1 084.3	1 106.4	1 203.6	1 317.7	1 443
55-59. . . .	831.5	858.4	896.8	916.4	916.6	966.3	971.8	1 100.8	1 180.2	1 300
60-64. . . .	721.2	783.2	755.4	792.8	822.5	848.7	882.7	958.7	1 022.7	1 182
65-69. . . .	525.9	587.9	567.8	635.4	655.9	673.5	723.7	766.7	860.8	1 054
70-74. . . .	364.1	398.8	430.7	450.4	485.3	519.1	858.8	966.4	1 046.6	857
75-79. . . .	208.8	225.3	250.7	276.4	307.3	303.8				596
80-84. . . .	98.2	99.7	108.7	143.3	146.2	148.3	224.6	254.1	290.7	321
85 & + . . .	41.2	43.5	45.7	68.1	66.0	57.0				165
All ages — Tous âges.	17 976.5	18 722.3	18 108.4	18 743.3	19 190.2	19 466.9	19 890.7	20 314.0	21 279.6	21 734
	Percentages — Pourcentages									
0- 4. . . .	9.12	9.55	9.14	9.14	8.62	9.19	8.65	5.84	8.45	8.23
5- 9. . . .	9.00	8.68	8.88	9.00	8.74	8.26	8.30	7.38	8.08	6.14
10-14. . . .	8.59	8.53	8.52	8.29	8.62	8.26	8.22	8.35	5.38	6.26
15-19. . . .	8.64	8.64	8.38	8.61	8.70	8.41	8.00	8.45	7.12	7.04
20-24. . . .	8.47	8.42	8.18	9.33	8.82	8.28	7.87	8.07	7.81	7.40
25-29. . . .	7.97	7.87	7.25	6.70	7.52	7.74	7.78	7.64	7.96	7.54
30-34. . . .	7.52	7.32	6.99	6.90	7.00	7.20	7.51	7.44	7.72	4.90
35-39. . . .	7.10	7.00	6.83	6.69	6.59	6.89	7.04	7.37	7.19	6.47
40-44. . . .	6.53	6.54	6.41	6.34	6.31	6.35	6.52	7.09	6.84	7.12
45-49. . . .	5.81	6.11	6.07	5.98	5.99	5.77	6.13	6.55	6.57	7.07
50-54. . . .	5.72	5.35	5.47	5.52	5.37	5.57	5.56	5.93	6.19	6.64
55-59. . . .	4.62	4.59	4.95	4.89	4.78	4.96	4.89	5.42	5.54	5.98
60-64. . . .	4.01	4.18	4.17	4.23	4.29	4.36	4.44	4.72	4.81	5.44
65-69. . . .	2.92	3.14	3.14	3.39	3.42	3.46	3.64	3.77	4.04	4.85
70-74. . . .	2.03	2.13	2.38	2.40	2.53	2.67	4.32	4.76	4.92	3.94
75-79. . . .	1.16	1.20	1.38	1.47	1.60	1.56				2.74
80-84. . . .	0.55	0.53	0.60	0.76	0.76	0.76	1.13	1.25	1.37	1.48
85 & + . . .	0.23	0.23	0.25	0.36	0.34	0.29				0.76
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	26.71	26.76	26.54	26.43	25.98	25.71	25.17	1.57	21.91	20.63
15-44. . . .	46.23	45.79	45.04	44.57	44.94	44.87	44.72	6.06	44.64	40.47
45-64. . . .	20.16	20.23	20.66	20.62	20.43	20.66	21.02	2.62	23.11	25.13
65 & + . . .	6.89	7.23	7.75	8.38	8.65	8.74	9.09	9.78	10.33	13.77
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

14. FRANCE (*concluded*)

Tableau III (*suite*)

14. FRANCE (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*									
	1851	*1861*	*1872*	*1881*	*1891*	*1901*	*1911*	*1921*	*1931*	*1950*
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	3 321.7	3 612.1	3 352.0	3 453.3	3 322.1	3 574.9	3 464.9	2 398.3	3 589.7	3 646
5- 9. . . .	3 295.2	3 272.8	3 267.9	3 402.2	3 353.9	3 213.0	3 319.1	3 001.2	3 530.1	2 711
10-14. . . .	3 146.4	3 235.4	3 140.8	3 142.1	3 324.3	3 227.2	3 292.5	3 406.2	2 328.7	2 741
15-19. . . .	3 148.2	3 247.8	3 047.6	3 244.1	3 340.0	3 266.7	3 179.8	3 446.1	3 051.1	3 102
20-24. . . .	2 976.9	3 074.8	3 172.6	3 379.8	3 278.9	3 173.5	3 095.5	3 043.9	3 378.3	3 296
25-29. . . .	2 867.5	2 932.9	2 604.7	2 550.7	2 920.8	3 002.7	3 066.1	2 782.7	3 487.7	3 349
30-34. . . .	2 704.9	2 770.2	2 542.0	2 608.1	2 715.2	2 777.6	2 970.8	2 763.0	3 262.3	2 149
35-39. . . .	2 569.9	2 649.4	2 485.3	2 536.0	2 545.1	2 674.4	2 795.0	2 768.4	2 784.8	2 805
40-44. . . .	2 358.5	2 472.8	2 329.2	2 393.5	2 401.2	2 458.4	2 561.8	2 754.5	2 677.6	3 094
45-49. . . .	2 098.4	2 297.7	2 196.0	2 228.2	2 296.2	2 231.2	2 408.1	2 600.1	2 577.3	3 064
50-54. . . .	2 067.3	2 008.9	1 974.4	2 044.0	2 048.2	2 082.4	2 160.2	2 334.7	2 486.5	2 748
55-59. . . .	1 569.6	1 701.8	1 786.3	1 807.8	1 797.9	1 883.2	1 881.0	2 115.2	2 250.9	2 246
60-64. . . .	1 312.2	1 552.9	1 503.1	1 574.5	1 611.0	1 627.6	1 643.9	1 804.0	1 909.1	2 036
65-69. . . .	995.6	1 097.7	1 101.4	1 240.1	1 268.4	1 272.4	1 352.9	1 410.4	1 572.0	1 785
70-74. . . .	697.8	724.3	837.4	878.3	935.3	964.2	1 546.3	1 686.9	1 821.5	1 446
75-79. . . .	379.7	419.1	468.3	526.7	577.4	554.4				982
80-84. . . .	171.5	182.8	190.2	267.0	264.8	257.1	370.4	407.5	453.4	499
85& + . . .	71.9	74.3	77.0	118.0	112.3	90.9				235
All ages — Tous âges.	35 753.2	37 327.7	36 076.2	37 394.4	38 113.0	38 331.8	39 108.3	38 723.1	41 161.1	41 934
	Percentages — Pourcentages									
0- 4. . . .	9.29	9.68	9.29	9.24	8.72	9.33	8.86	6.19	8.72	8.70
5- 9. . . .	9.22	8.77	9.06	9.10	8.80	8.38	8.49	7.75	8.58	6.47
10-14. . . .	8.80	8.67	8.71	8.40	8.72	8.42	8.42	8.80	5.66	6.54
15-19. . . .	8.81	8.70	8.45	8.68	8.76	8.52	8.13	8.90	7.41	7.40
20-24. . . .	8.33	8.24	8.79	9.04	8.60	8.28	7.92	7.86	8.21	7.86
25-29. . . .	8.02	7.86	7.22	6.82	7.66	7.83	7.84	7.19	8.48	7.99
30-34. . . .	7.57	7.42	7.05	6.98	7.12	7.25	7.60	7.14	7.93	5.13
35-39. . . .	7.19	7.10	6.89	6.78	6.68	6.98	7.15	7.15	6.77	6.69
40-44. . . .	6.60	6.62	6.46	6.40	6.30	6.41	6.55	7.12	6.51	7.38
45-49. . . .	5.87	6.16	6.09	5.96	6.02	5.82	6.16	6.71	6.26	7.31
50-54. . . .	5.78	5.38	5.47	5.47	5.37	5.43	5.52	6.03	6.04	6.55
55-59. . . .	4.39	4.56	4.95	4.84	4.72	4.91	4.81	5.46	5.47	5.36
60-64. . . .	3.67	4.16	4.17	4.21	4.23	4.25	4.20	4.66	4.64	4.86
65-69. . . .	2.78	2.94	3.05	3.32	3.33	3.32	3.46	3.64	3.82	4.26
70-74. . . .	1.95	1.94	2.32	2.35	2.45	2.52	3.95	4.36	4.43	3.45
75-79. . . .	1.06	1.32	1.30	1.41	1.52	1.45				2.34
80-84. . . .	0.48	0.49	0.53	0.71	0.69	0.67	0.95	1.05	1.10	1.19
85& + . . .	0.20	0.20	0.21	0.32	0.29	0.24				0.56
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	27.31	27.12	27.06	26.74	26.24	26.13	25.77	22.74	22.96	21.71
15-44. . . .	46.52	45.94	44.86	44.70	45.12	45.27	45.19	45.36	45.31	42.45
45-64. . . .	19.71	20.26	20.68	20.48	20.34	20.41	20.69	22.86	22.41	24.08
65& + . . .	6.47	6.89	7.41	8.11	8.28	8.20	8.36	9.05	9.35	11.80
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1851-1891 : J. Bertillon, *Statistique internationale...*

1901 : *Annuaire statistique*, 1905.

1911, 1921 : *Résultats statistiques du recensement général de la population*, 1921.

1931 : *Annuaire statistique*, 1935.

1950 : *Demographic Yearbook*, 1951. — *Annuaire démographique*, 1951.

Table III (*continued*)

15. GERMANY

Tableau III (*suite*)

15. ALLEMAGNE

Age (in years) (en années)	Male — Masculin									
	1871	1880	1890	1900	1910	1925 [1]	1933	1946 Federal Republic [2] / République fédérale [2]	1946 People's Republic / République démocratique	1950 Federal Republic [2] / République fédérale [2]
	Numbers in 000's — Nombres en milliers									
0- 4	2 602.4	3 092.1	3 225.0	3 697.8	3 923.2	2 984.3	2 182.9	1 617.1	612.6	1 717.3
5- 9	2 312.6	2 582.7	2 768.6	3 207.0	3 714.0	2 023.2	2 708.1	2 151.3	867.6	1 824.2
10-14	3 996.8	2 343.1	2 712.5	2 925.9	3 470.7	3 134.5	2 906.2	1 770.4	715.0	2 196.6
15-19		2 100.7	2 392.2	2 666.2	3 148.6	3 285.2	2 069.4	1 684.9	609.5	1 769.3
20-24	3 271.0	1 901.5	2 104.9	2 539.7	2 805.6	3 064.7	3 081.6	1 168.7	309.0	1 773.7
25-29		1 620.3	1 842.4	2 225.1	2 509.3	2 467.9	3 081.5	946.5	263.1	1 520.5
30-34	2 672.4	1 501.3	1 661.6	1 961.9	2 406.1	2 026.9	2 860.7	1 142.4	335.2	1 051.8
35-39		1 367.6	1 428.6	1 707.7	2 096.1	1 964.8	2 202.1	1 435.5	457.2	1 559.6
40-44	2 130.0	1 239.1	1 297.0	1 510.1	1 813.2	1 853.4	1 919.8	1 609.5	567.3	1 742.1
45-49		1 038.6	1 174.6	1 260.3	1 536.8	1 860.1	1 843.0	1 485.2	574.8	1 762.6
50-54	1 662.6	906.1	1 012.6	1 104.7	1 311.9	1 587.9	1 714.1	1 154.3	482.0	1 420.7
55-59		804.6	814.4	948.4	1 033.3	1 327.0	1 643.8	1 016.4	445.1	1 079.0
60-64	1 016.9	670.2	653.6	755.8	837.9	1 029.0	1 291.4	900.4	381.2	940.8
65-69		460.6	523.6	544.8	641.6	739.6	973.2	771.5	323.9	790.9
70-74	407.7	289.7	351.5	356.6	430.0	466.7	651.2	565.9	436.1	629.6
75-79		159.5	177.5	210.8	231.7	246.2	352.0	295.4		369.2
80-84	66.3	60.3	67.9	88.3	95.6	135.3	154.3	121.8		155.2
85 & +		18.2	22.2	26.1	34.7		50.4	36.2		47.6
All ages — Tous âges.	20 138.7	22 156.2	24 230.7	27 737.2	32 040.3	30 196.7	31 685.7	19 873.4	7 379.6	22 350.7
	Percentages — Pourcentages									
0- 4	12.92	13.96	13.31	13.33	12.24	9.88	6.89	8.14	8.30	7.68
5- 9	11.48	11.66	11.43	11.56	11.59	6.70	8.55	10.83	11.76	8.16
10-14	19.85	10.58	11.19	10.55	10.83	10.38	9.17	8.91	9.69	9.83
15-19		9.48	9.87	9.61	9.83	10.88	6.53	8.48	8.26	7.91
20-24	16.24	8.58	8.69	9.16	8.76	10.15	9.73	5.88	4.19	7.94
25-29		7.31	7.60	8.02	7.83	8.17	9.73	4.76	3.57	6.80
30-34	13.27	6.78	6.86	7.07	7.51	6.71	9.03	5.75	4.54	4.71
35-39		6.17	5.90	6.16	6.54	6.51	6.95	7.23	6.20	6.98
40-44	10.58	5.59	5.35	5.44	5.66	6.14	6.06	8.10	7.69	7.79
45-49		4.69	4.85	4.54	4.80	6.16	5.88	7.47	7.79	7.89
50-54	8.26	4.09	4.18	3.98	4.09	5.26	5.41	5.81	6.53	6.36
55-59		3.63	3.36	3.42	3.22	4.39	5.19	5.11	6.03	4.83
60-64	5.05	3.02	2.70	2.72	2.62	3.41	4.07	4.53	5.17	4.21
65-69		2.08	2.16	1.96	2.00	2.45	3.07	3.88	4.39	3.54
70-74	2.02	1.31	1.45	1.29	1.34	1.55	2.06	2.85	5.91	2.82
75-79		0.72	0.73	0.76	0.72	0.82	1.11	1.49		1.65
80-84	0.33	0.27	0.28	0.32	0.30	0.45	0.49	0.61		0.69
85 & +		0.08	0.09	0.09	0.11		0.16	0.18		0.21
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14	...	36.20	35.93	35.44	34.66	26.96	24.61	27.88	29.75	25.67
15-44	...	43.91	44.27	45.46	46.13	48.56	48.03	40.20	34.45	42.13
45-64	...	15.43	15.09	14.66	14.73	19.22	20.49	22.92	25.52	23.29
65 & +	...	4.46	4.71	4.42	4.47	5.27	6.89	9.01	10.30	8.91
All ages — Tous âges.	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Excluding Saar.
[2] Excluding West Berlin.

[1] Non compris la Sarre.
[2] Non compris Berlin-Ouest.

Table III (*continued*)

15. GERMANY (*continued*)

Tableau III (*suite*)

15. ALLEMAGNE (*suite*)

Age (in years) (en années)	Female — Féminin									
	1871	1880	1890	1900	1910	1925 [1]	1933	1946 Federal Republic [1] République fédérale [2]	1946 People's Republic République démocratique	1950 Federal Republic [2] République fédérale [2]
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	2 590.3	3 076.7	3 203.8	3 672.3	3 867.1	2 887.2	2 105.8	1 550.4	588.4	1 632.1
5- 9. . . .	2 313.0	2 588.1	2 762.4	3 199.2	3 683.9	1 963.3	2 629.6	2 071.9	834.9	1 749.9
10-14. . . .	4 019.9	2 333.2	2 699.7	2 912.9	3 448.9	3 258.0	2 809.5	1 709.9	693.9	2 116.9
15-19. . . .		2 126.0	2 410.4	2 653.0	3 138.1	3 079.3	2 020.8	1 729.4	681.2	1 704.4
20-24. . . .	3 495.7	1 972.6	2 152.4	2 559.7	2 802.1	3 085.8	3 067.4	1 940.1	706.9	1 804.2
25-29. . . .		1 696.0	1 903.0	2 243.5	2 517.2	2 839.3	3 093.1	1 586.4	588.6	2 026.2
30-34. . . .	2 800.0	1 583.2	1 725.3	1 990.1	2 416.4	2 552.7	2 920.1	1 818.1	698.0	1 425.3
35-39. . . .		1 432.5	1 491.4	1 741.5	2 105.0	2 318.7	2 686.0	2 061.5	834.1	2 044.7
40-44. . . .	2 245.5	1 316.7	1 392.5	1 578.1	1 852.7	2 054.1	2 385.5	1 934.3	811.1	2 113.6
45-49. . . .		1 098.6	1 267.1	1 345.1	1 605.7	1 986.5	2 148.0	1 740.5	760.8	1 928.2
50-54. . . .	1 770.2	1 002.1	1 126.4	1 239.0	1 432.9	1 645.4	1 900.4	1 518.5	676.9	1 711.0
55-59. . . .		894.9	915.0	1 081.3	1 173.0	1 400.8	1 765.1	1 280.6	599.1	1 447.2
60-64. . . .	1 122.4	754.2	769.7	890.6	1 009.3	1 137.0	1 381.0	1 080.2	492.8	1 210.0
65-69. . . .		523.7	621.5	655.2	793.1	876.4	1 088.0	894.4	404.0	971.9
70-74. . . .	453.0	333.7	420.3	446.2	548.9	591.0	744.3	642.7	563.5	750.5
75-79. . . .		187.5	217.5	268.0	304.9	338.0	455.1	349.9		438.8
80-84. . . .	83.4	72.3	87.2	115.7	135.5	200.3	219.9	159.0		198.2
85 & + . . .		25.0	32.0	38.8	53.2		83.2	54.4		72.0
All ages — Tous âges.	20 893.4	23 017.0	25 197.6	28 629.9	32 885.8	32 213.8	33 532.8	24 122.2	9 834.2	25 345.1
	Percentages — Pourcentages									
0- 4. . . .	12.40	13.37	12.71	12.83	11.76	8.96	6.28	6.43	5.93	6.44
5- 9. . . .	11.07	11.24	10.96	11.17	11.20	6.10	7.84	8.59	8.41	6.90
10-14. . . .	19.24	10.14	10.71	10.18	10.49	10.12	8.38	7.09	6.99	8.35
15-19. . . .		9.24	9.57	9.27	9.54	9.56	6.03	7.17	6.86	6.72
20-24. . . .	16.73	8.57	8.54	8.94	8.52	9.58	9.15	8.04	7.12	7.12
25-29. . . .		7.37	7.55	7.84	7.65	8.82	9.22	6.58	5.93	7.99
30-34. . . .	13.40	6.88	6.85	6.95	7.35	7.93	8.71	7.54	7.03	5.62
35-39. . . .		6.22	5.92	6.08	6.40	7.20	8.01	8.55	8.40	8.07
40-44. . . .	10.75	5.72	5.53	5.51	5.63	6.38	7.12	8.02	8.17	8.34
45-49. . . .		4.77	5.03	4.70	4.88	6.17	6.41	7.22	7.66	7.61
50-54. . . .	8.47	4.35	4.47	4.33	4.36	5.11	5.67	6.30	6.82	6.75
55-59. . . .		3.89	3.63	3.78	3.57	4.35	5.26	5.31	6.03	5.71
60-64. . . .	5.37	3.28	3.05	3.11	3.07	3.53	4.12	4.48	4.96	4.77
65-69. . . .		2.28	2.47	2.29	2.41	2.72	3.24	3.71	4.07	3.83
70-74. . . .	2.17	1.45	1.67	1.56	1.67	1.84	2.31	2.66	5.67	2.96
75-79. . . .		0.81	0.86	0.94	0.93	1.05	1.36	1.45		1.73
80-84. . . .	0.40	0.31	0.35	0.40	0.41	0.62	0.66	0.66		0.78
85 & + . . .		0.11	0.13	0.14	0.16		0.25	0.23		0.28
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	...	34.75	34.38	34.18	33.45	25.18	22.50	22.11	21.33	21.69
15-44. . . .	...	44.00	43.96	44.59	45.09	49.47	48.24	45.90	43.51	43.86
65-64. . . .	...	16.29	16.18	15.92	15.88	19.16	21.46	23.31	25.47	24.84
45 & + . . .	...	4.96	5.48	5.33	5.58	6.23	7.82	8.71	9.74	9.58
All ages — Tous âges.	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Excluding Saar.
[2] Excluding West Berlin.

[1] Non compris la Sarre.
[2] Non compris Berlin-Ouest.

Table III (*continued*)

15. GERMANY (*concluded*)

Tableau III (*suite*)

15. ALLEMAGNE (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes									
	1871	1880	1890	1900	1910	1925 [1]	1933	1946		1950
								Federal Republic [2] République fédérale [2]	People's Republic République démocratique	Federal Republic [2] République fédérale [2]
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	5 192.7	6 168.8	6 428.8	7 370.1	7 790.3	5 871.5	4 288.7	3 167.5	1 201.0	3 349.3
5- 9. . . .	4 625.7	5 170.8	5 531.1	6 406.2	7 397.9	3 986.5	5 337.7	4 223.2	1 702.5	3 574.1
10-14. . . .	8 016.7	4 676.3	5 412.2	5 838.5	6 919.6	6 392.5	5 715.7	3 480.3	1 408.9	4 313.5
15-19. . . .		4 226.7	4 802.7	5 319.2	6 286.7	6 364.5	4 090.2	3 414.3	1 290.6	3 473.6
20-24. . . .	6 766.6	3 874.1	4 257.3	5 099.4	5 607.7	6 150.5	6 149.0	3 108.8	1 015.9	3 578.0
25-29. . . .		3 316.2	3 745.4	4 468.6	5 026.5	5 307.2	6 174.6	2 532.9	851.7	3 546.7
30-34. . . .	5 472.3	3 084.5	3 386.8	3 952.0	4 822.4	4 579.6	5 780.8	2 960.5	1 033.2	2 477.1
35-39. . . .		2 800.0	2 920.1	3 449.2	4 201.0	4 283.5	4 888.1	3 497.0	1 291.4	3 604.4
40-44. . . .	4 375.5	2 555.8	2 689.5	3 088.2	3 665.9	3 907.5	4 305.6	3 543.8	1 378.4	3 855.7
45-49. . . .		2 137.2	2 441.7	2 605.4	3 142.4	3 846.6	3 991.0	3 225.8	1 335.5	3 690.8
50-54. . . .	3 432.9	1 908.3	2 138.9	2 343.7	2 744.8	3 233.3	3 614.5	2 672.8	1 159.0	3 131.7
55-59. . . .		1 699.5	1 729.4	2 029.6	2 206.3	2 727.8	3 408.9	2 296.9	1 044.2	2 526.1
60-64. . . .	2 139.3	1 424.4	1 423.3	1 646.4	1 847.1	2 166.0	2 672.4	1 980.6	874.0	2 150.8
65-69. . . .		984.3	1 145.0	1 200.0	1 434.7	1 616.0	2 061.2	1 665.9	727.9	1 762.8
70-74. . . .	860.7	623.4	771.8	802.8	978.9	1 057.7	1 425.5	1 208.5	999.6	1 380.1
75-79. . . .		347.0	395.0	478.7	536.6	584.2	807.1	645.3		808.0
80-84. . . .	149.7	132.6	155.1	204.0	229.0	335.6	374.2	280.8		353.4
85 & + . . .		43.2	54.3	64.9	87.9		133.6	90.7		119.6
All ages — Tous âges.	41 032.1	45 173.1	49 428.4	56 367.0	64 925.7	62 410.5	65 218.8	43 995.6	17 313.8	47 695.7
	Percentages — Pourcentages									
0- 4. . . .	12.66	13.65	13.00	13.07	12.00	9.41	6.58	7.20	6.94	7.02
5- 9. . . .	11.27	11.45	11.19	11.36	11.39	6.39	8.18	9.60	9.84	7.49
10-14. . . .	19.54	10.35	10.95	10.36	10.66	10.24	8.76	7.91	8.14	9.04
15-19. . . .		9.36	9.72	9.44	9.68	10.20	6.27	7.76	7.46	7.28
20-24. . . .	16.49	8.58	8.61	9.05	8.64	9.86	9.43	7.07	5.87	7.50
25-29. . . .		7.34	7.58	7.93	7.74	8.50	9.47	5.76	4.92	7.43
30-34. . . .	13.34	6.83	6.85	7.01	7.43	7.34	8.86	6.73	5.97	5.19
35-39. . . .		6.20	5.91	6.12	6.47	6.86	7.49	7.95	7.46	7.55
40-44. . . .	10.66	5.66	5.44	5.48	5.65	6.26	6.60	8.06	7.96	8.08
45-49. . . .		4.73	4.94	4.62	4.84	6.16	6.12	7.33	7.72	7.74
50-54. . . .	8.37	4.22	4.33	4.16	4.23	5.18	5.54	6.08	6.70	6.56
55-59. . . .		3.76	3.50	3.60	3.40	4.37	5.23	5.22	6.03	5.29
60-64. . . .	5.21	3.15	2.88	2.92	2.84	3.47	4.10	4.50	5.05	4.51
65-69. . . .		2.18	2.32	2.13	2.21	2.59	3.16	3.79	4.21	3.70
70-74. . . .	2.10	1.38	1.56	1.42	1.51	1.70	2.19	2.75	5.77	2.89
75-79. . . .		0.77	0.80	0.85	0.83	0.94	1.24	1.47		1.69
80-84. . . .	0.36	0.29	0.31	0.36	0.35	0.54	0.57	0.64		0.74
85 & + . . .		0.10	0.11	0.12	0.14		0.20	0.21		0.25
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	...	35.45	35.14	34.79	34.05	26.04	23.52	24.71	24.92	23.55
15-44. . . .	...	43.97	44.11	45.03	45.61	49.02	48.12	43.33	39.64	43.03
45-64. . . .	...	15.86	15.65	15.30	15.31	19.18	20.99	23.13	25.50	24.10
65 & + . . .	...	4.72	5.10	4.88	5.04	5.77	7.36	8.86	9.98	9.27
All ages — Tous âges.	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1871, 1880, 1890 : J. Bertillon, *Statistique internationale...*
1900, 1910 : *Annuaire international de statistique...*
1925, 1933 : *Le mouvement naturel...*

[1] Excluding Saar.
[2] Excluding West Berlin.

[1] Non compris la Sarre.
[2] Non compris Berlin-Ouest.

Table III (*continued*)

16. GREECE

Tableau III (*suite*)

16. GRÈCE

Age (in years) (en années)		Male — Masculin						
	1861	1870	1879	1889	1907	1921	1928	1940
		Numbers in 000's — Nombres en milliers						
0- 4		104.9	129.1	172.5	192.6	253.3	390.5	388.2
5- 9	256.5	97.4	110.6	147.6	178.5	322.0	320.2	424.2
10-14		81.0	100.8	131.6	150.0	321.0	313.3	428.3
15-19		63.0	77.0	102.0	120.7	261.4	342.7	344.3
20-24	62.6	56.0	59.3	79.1	102.6	196.6	259.9	274.2
25-29	56.2	74.1	70.2	93.3	104.2	157.9	253.3	299.2
30-34	66.2	54.2	56.5	75.2	65.2 [1]	133.9	184.3	278.0
35-39		51.8	64.4	84.8	107.8 [2]	152.3	174.4	247.1
40-44	51.1	32.7	53.5	71.1	63.7	141.4	152.1	202.1
45-49		31.2	41.7	54.7	66.0	137.0	160.4	159.8
50-54	33.5	22.2	22.3	29.9	42.5	114.6	139.2	145.2
55-59		22.8	24.8	32.4	46.3	89.4	107.9	133.9
60-64	19.2	14.9	14.7	19.7	28.8	74.5	92.1	118.4
65-69		12.6	14.4	18.7	28.2	54.3	70.7	86.3
70-74		6.8	6.8	9.2	13.1	40.3	48.8	63.1
75-79	9.3	4.2	5.4	7.2	8.8	21.3	29.9	34.5
80-84		1.9	1.6	2.2	2.8	13.8	15.1	19.6
85 & +		1.6	1.6	2.2	2.4	8.6	10.9	12.1
All ages — Tous âges	554.6	733.3	854.7	1 133.4	1 324.2	2 493.6	3 065.7	3 658.5
		Percentages — Pourcentages						
0- 4		14.30	15.11	15.22	14.55	10.16	12.74	10.61
5- 9	46.25	13.28	12.94	13.02	13.48	12.91	10.44	11.59
10-14		11.05	11.79	11.61	11.33	12.87	10.22	11.71
15-19		8.59	9.01	9.00	9.12	10.48	11.18	9.41
20-24	11.29	7.64	6.94	6.98	7.75	7.89	8.48	7.49
25-29	10.13	10.11	8.21	8.23	7.87	6.33	8.26	8.18
30-34	11.94	7.39	6.61	6.64	4.92	5.37	6.01	7.60
35-39		7.06	7.53	7.48	8.14	6.11	5.69	6.75
40-44	9.21	4.46	6.26	6.27	4.81	5.67	4.96	5.53
45-49		4.25	4.88	4.83	4.98	5.49	5.23	4.37
50-54	6.04	3.03	2.61	2.64	3.21	4.60	4.54	3.97
55-59		3.11	2.90	2.86	3.50	3.59	3.52	3.66
60-64	3.46	2.03	1.72	1.74	2.17	2.99	3.00	3.24
65-69		1.72	1.68	1.65	2.13	2.18	2.31	2.36
70-74		0.93	0.80	0.81	0.99	1.62	1.59	1.72
75-79	1.68	0.57	0.63	0.64	0.66	0.85	0.98	0.94
80-84		0.26	0.19	0.19	0.21	0.55	0.49	0.54
85 & +		0.22	0.19	0.19	0.18	0.34	0.36	0.33
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Summary — Résumé						
0-14	...	38.63	39.84	39.85	39.36	35.94	33.40	33.91
15-44	...	45.25	44.56	44.60	42.61	41.85	44.58	44.96
45-64	...	12.42	12.11	12.07	13.86	16.67	16.29	15.24
65 & +	...	3.70	3.49	3.48	4.17	5.54	5.73	5.89
All ages — Tous âges	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] 30-33.

[2] 34-39.

Table III (*continued*)

16. GREECE (*continued*)

Tableau III (*suite*)

16. GRECE (*suite*)

Age (in years) (en années)	*Female — Féminin*							
	1861	*1870*	*1879*	*1889*	*1907*	*1921*	*1928*	*1940*
				Numbers in 000's — Nombres en milliers				
0- 4.		102.2	120.6	160.3	181.2	231.2	374.0	370.5
5- 9.	244.3	91.2	101.9	133.4	165.4	297.3	305.4	396.9
10-14.		71.3	85.7	113.4	139.7	293.1	286.4	415.4
15-19.		73.8	86.0	113.8	151.8	276.5	351.0	338.7
20-24.	70.2	61.1	63.2	83.2	107.3	215.6	288.0	278.8
25-29.	49.0	69.2	71.8	94.6	115.3	190.5	264.9	303.9
30-34.	61.2	46.8	53.2	71.0	56.0 [1]	163.8	198.4	273.4
35-39.		46.4	59.8	77.6	111.8 [2]	169.8	200.8	247.5
40-44.	47.3	28.8	34.8	45.5	56.0	144.9	174.5	218.4
45-49.		31.8	35.6	46.9	62.8	122.8	152.5	164.4
50-54.	31.3	19.9	19.1	25.7	34.2	109.0	136.2	166.2
55-59.		22.7	24.8	32.6	46.1	79.5	101.0	137.5
60-64.	17.2	13.2	13.4	18.0	25.4	81.1	99.0	127.0
65-69.		12.3	14.3	19.0	27.6	52.5	70.6	87.2
70-74.		5.7	5.8	7.6	10.7	45.4	54.5	75.1
75-79.	8.9	3.9	5.0	6.4	9.0	21.4	29.4	41.9
80-84.		1.6	1.5	2.0	2.6	16.1	18.7	26.7
85 & +.		1.6	1.8	2.4	3.4	10.0	13.9	17.0
All ages — Tous âges.	529.4	703.5	798.3	1 053.4	1 306.3	2 520.5	3 119.2	3 686.4
				Percentages — Pourcentages				
0- 4.		14.53	15.10	15.21	13.87	9.17	11.99	10.05
5- 9.	46.15	12.96	12.76	12.66	12.66	11.80	9.79	10.77
10-14.		10.13	10.74	10.77	10.69	11.63	9.18	11.27
15-19.		10.49	10.77	10.80	11.62	10.97	11.25	9.19
20-24.	13.26	8.68	7.92	7.90	8.21	8.55	9.23	7.56
25-29.	9.26	9.84	8.99	8.98	8.83	7.56	8.49	8.24
30-34.	11.56	6.65	6.66	6.74	4.29	6.50	6.36	7.42
35-39.		6.60	7.49	7.37	8.56	6.74	6.44	6.71
40-44.	8.93	4.09	4.36	4.32	4.29	5.75	5.60	5.92
45-49.		4.52	4.46	4.45	4.81	4.87	4.89	4.46
50-54.	5.91	2.83	2.39	2.44	2.62	4.32	4.37	4.51
55-59.		3.23	3.11	3.10	3.53	3.15	3.24	3.73
60-64.	3.25	1.88	1.68	1.71	1.94	3.22	3.17	3.45
65-69.		1.75	1.79	1.80	2.11	2.08	2.26	2.36
70-74.		0.81	0.73	0.72	0.82	1.80	1.75	2.04
75-79.	1.68	0.55	0.63	0.61	0.69	0.85	0.94	1.14
80-84.		0.23	0.19	0.19	0.20	0.64	0.60	0.72
85 & +.		0.23	0.23	0.23	0.26	0.40	0.45	0.46
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
				Summary — Résumé				
0-14.	...	37.62	38.60	38.64	37.22	32.60	30.96	32.09
15-44.	...	46.35	46.19	46.11	45.80	46.07	47.37	45.04
45-64.	...	12.46	11.64	11.70	12.90	15.56	15.67	16.15
65 & +.	...	3.57	3.57	3.55	4.08	5.77	6.00	6.72
All ages — Tous âges.	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] 30-33.

[2] 34-39.

Table III (*continued*)

16. GREECE (*concluded*)

Tableau III (*suite*)

16. GRÈCE (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes							
	1861	1870	1879	1889	1907	1921	1928	1940
	Numbers in 000's — Nombres en milliers							
0- 4.	500.8	207.0	249.7	332.9	373.8	484.5	764.5	758.7
5- 9.		188.6	212.6	281.0	343.9	619.3	625.6	821.1
10-14.		152.4	186.5	245.0	289.6	614.1	599.7	843.6
15-19.		136.8	163.0	215.8	272.6	537.9	693.7	683.0
20-24.	132.8	117.1	122.5	162.3	209.9	412.2	547.9	553.0
25-29.	105.2	143.3	142.0	188.0	219.5	348.4	518.2	603.0
30-34.	127.4	101.1	109.7	146.3	121.2 [1]	297.7	382.7	551.4
35-39.		98.2	124.2	162.4	219.6 [2]	322.1	375.2	494.7
40-44.	98.4	61.5	88.3	116.6	119.6	286.3	326.6	420.4
45-49.		63.1	77.3	101.6	128.8	259.8	312.9	324.2
50-54.	64.8	42.0	41.4	55.6	76.8	223.6	275.4	311.3
55-59.		45.5	49.6	65.0	92.4	168.9	208.9	271.4
60-64.	36.4	28.1	28.1	37.7	54.2	155.6	191.1	245.4
65-69.		24.9	28.7	37.7	55.8	106.8	141.3	173.5
70-74.	18.2	12.5	12.6	16.8	23.8	85.7	103.3	138.2
75-79.		8.1	10.4	13.6	17.9	42.7	59.3	76.4
80-84.		3.4	3.1	4.2	5.4	29.9	33.8	46.3
85 & +.		3.3	3.4	4.5	5.8	18.6	24.8	29.2
All ages — Tous âges	1 084.0	1 436.9	1 653.1	2 187.0	2 630.6	5 014.1	6 184.9	7 344.8
	Percentages — Pourcentages							
0- 4.	46.20	14.41	15.10	15.22	14.21	9.66	12.36	10.33
5- 9.		13.12	12.86	12.85	13.07	12.35	10.11	11.18
10-14.		10.61	11.28	11.20	11.01	12.25	9.70	11.48
15-19.		9.52	9.86	9.87	10.36	10.73	11.21	9.30
20-24.	12.25	8.15	7.41	7.42	7.98	8.22	8.86	7.53
25-29.	9.70	9.97	8.59	8.60	8.34	6.95	8.38	8.21
30-34.	11.75	7.04	6.64	6.69	4.61	5.94	6.19	7.51
35-39.		6.83	7.51	7.43	8.35	6.42	6.07	6.74
40-44.	9.08	4.28	5.34	5.33	4.55	5.71	5.28	5.72
45-49.		4.39	4.68	4.65	4.90	5.18	5.06	4.41
50-54.	5.98	2.92	2.50	2.54	2.92	4.46	4.45	4.24
55-59.		3.17	3.00	2.97	3.51	3.37	3.38	3.70
60-64.	3.36	1.96	1.70	1.72	2.06	3.10	3.09	3.34
65-69.		1.73	1.74	1.72	2.12	2.13	2.28	2.36
70-74.	1.68	0.87	0.76	0.77	0.90	1.71	1.67	1.88
75-79.		0.56	0.63	0.62	0.68	0.85	0.96	1.04
80-84.		0.24	0.19	0.19	0.21	0.60	0.55	0.63
85 & +.		0.23	0.21	0.21	0.22	0.37	0.40	0.40
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé							
0-14.	...	38.14	39.24	39.27	38.29	34.26	32.17	32.99
15-44.	...	45.79	45.35	45.34	44.19	43.97	45.99	45.01
45-64.	...	12.44	11.88	11.88	13.39	16.11	15.98	15.69
65 & +.	...	3.63	3.53	3.51	4.13	5.66	5.86	6.31
All ages — Tous âges	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1861, 1870, 1879, 1889 : J. Bertillon, *Statistique internationale...*
1907 : *Annuaire international de statistique...*
1921, 1928 : *Le mouvement naturel...*
1940 : *Demographic Yearbook. — Annuaire démographique.*

[1] 30-33.

[2] 34-39.

Table III (*continued*)

17. GREAT BRITAIN

Tableau III (*suite*)

17. GRANDE-BRETAGNE

Age (in years) (en années)	*Male — Masculin*										
	1851	*1861*	*1871*	*1881*	*1891*	*1901*	*1911*	*1921*	*1931*	*1939*	*1951*
	Numbers in 000's — Nombres en milliers										
0- 4. . .	1 365.8	1 567.3	1 767.3	2 016.1	2 029.8	2 123.7	2 204.3	1 920.1	1 723.8	1 671	2 152.5
5- 9. . .	1 222.3	1 357.6	1 555.4	1 796.4	1 935.1	1 988.3	2 105.2	2 006.8	1 907.3	1 630	1 815.5
10-14. . .	1 126.5	1 225.3	1 410.7	1 608.0	1 840.1	1 909.3	1 994.4	2 083.8	1 835.0	1 735	1 638.5
15-19. . .	1 019.1	1 108.6	1 252.1	1 457.9	1 676.1	1 837.9	1 888.4	1 966.7	1 928.7	2 033	1 506.3
20-24. . .	924.1	987.9	1 090.4	1 278.9	1 421.4	1 683.0	1 704.4	1 651.3	1 904.9	1 667	1 568.4
25-29. . .	803.7	835.7	959.3	1 118.3	1 256.3	1 509.6	1 637.8	1 512.5	1 815.6	1 911	1 798.7
30-34. . .	706.4	752.5	846.4	952.3	1 106.9	1 308.6	1 546.1	1 436.3	1 595.5	1 891	1 685.1
35-39. . .	608.5	668.9	725.5	842.9	979.3	1 167.1	1 419.0	1 423.5	1 426.9	1 764	1 808.0
40-44. . .	545.1	625.0	670.1	763.6	842.9	1 016.2	1 208.2	1 368.9	1 363.8	1 459	1 864.3
45-49. . .	449.4	515.8	574.2	621.1	726.9	860.4	1 041.4	1 304.1	1 316.4	1 362	1 730.1
50-54. . .	399.7	448.7	516.7	552.3	623.6	719.9	866.5	1 090.4	1 243.0	1 274	1 463.4
55-59. . .	291.4	342.0	393.4	432.9	468.8	563.1	687.1	878.1	1 103.0	1 166	1 208.3
60-64. . .	260.6	306.2	337.7	386.0	406.4	466.0	537.1	677.2	869.7	1 018	1 047.7
65-69. . .	173.7	200.1	234.5	262.8	293.4	319.4	412.0	506.2	646.1	803	862.7
70-74. . .	132.3	146.3	172.7	181.2	210.0	221.8	269.1	315.3	422.5	538	649.9
75-79. . .	74.9	82.5	93.8	103.3	116.0	127.9	143.9	177.9	228.8	288	410.4
80-84. . .	37.4	40.2	44.8	48.2	50.8	59.4	63.8	75.7	93.4	123	185.0
85 & +. .	15.8	15.5	17.1	17.2	19.3	20.8	25.7	28.1	34.1	44	64.1
All ages — Tous âges.	10 156.7	11 226.1	12 662.1	14 439.4	16 003.1	17 902.4	19 754.4	20 422.9	21 458.5	22 378	23 458.9
	Percentages — Pourcentages										
0- 4. . .	13.45	13.96	13.96	13.96	12.68	11.86	11.16	9.40	8.03	7.47	9.18
5- 9. . .	12.03	12.09	12.28	12.44	12.09	11.11	10.66	9.83	8.89	7.28	7.74
10-14. . .	11.09	10.92	11.14	11.14	11.50	10.67	10.10	10.20	8.55	7.75	6.98
15-19. . .	10.03	9.88	9.89	10.10	10.47	10.27	9.56	9.63	8.99	9.08	6.42
20-24. . .	9.10	8.80	8.61	8.86	8.88	9.40	8.63	8.09	8.88	7.45	6.69
25-29. . .	7.91	7.44	7.58	7.74	7.85	8.43	8.29	7.41	8.46	8.54	7.67
30-34. . .	6.96	6.70	6.68	6.60	6.92	7.31	7.83	7.03	7.43	8.45	7.18
35-39. . .	5.99	5.96	5.73	5.84	6.12	6.52	7.18	6.97	6.65	7.88	7.71
40-44. . .	5.37	5.57	5.29	5.29	5.27	5.68	6.12	6.70	6.36	6.52	7.95
45-49. . .	4.42	4.59	4.54	4.30	4.54	4.81	5.27	6.39	6.13	6.09	7.37
50-54. . .	3.93	4.00	4.08	3.82	3.90	4.02	4.39	5.34	5.79	5.69	6.24
55-59. . .	2.87	3.05	3.11	3.00	2.93	3.15	3.48	4.30	5.14	5.21	5.15
60-64. . .	2.57	2.73	2.67	2.67	2.54	2.60	2.72	3.32	4.05	4.55	4.47
65-69. . .	1.71	1.78	1.85	1.82	1.83	1.78	2.09	2.48	3.01	3.59	3.68
70-74. . .	1.30	1.30	1.36	1.25	1.31	1.24	1.36	1.54	1.97	2.40	2.77
75-79. . .	0.74	0.73	0.74	0.72	0.73	0.71	0.73	0.87	1.07	1.29	1.75
80-84. . .	0.37	0.36	0.35	0.33	0.32	0.33	0.32	0.37	0.44	0.55	0.79
85 & +. .	0.16	0.14	0.14	0.12	0.12	0.12	0.13	0.14	0.16	0.20	0.27
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	36.57	36.97	37.38	37.54	36.27	33.64	31.92	29.43	25.47	22.50	23.90
15-44. . .	45.36	44.35	43.78	44.43	45.51	47.61	47.61	45.83	46.77	47.92	43.62
45-64. . .	13.79	14.37	14.40	13.79	13.91	14.58	15.86	19.35	21.11	21.54	23.23
65 & +. .	4.28	4.31	4.44	4.24	4.31	4.18	4.63	5.40	6.65	8.03	9.26
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

Tableau III (*suite*)

17. Great Britain (*continued*)

17. Grande-Bretagne (*suite*)

Age (in years) (en années)	Female — Féminin										
	1851	1861	1871	1881	1891	1901	1911	1921	1931	1939	1951
	Numbers in 000's — Nombres en milliers										
0- 4. . .	2 353.8	1 551.2	1 759.6	2 015.4	2 026.0	2 126.0	2 182.9	1 874.1	1 689.8	1 607	2 054.6
5- 9. . .	1 209.9	1 350.0	1 555.9	1 801.1	1 937.7	1 991.7	2 105.4	1 989.6	1 871.1	1 592	1 734.7
10-14. . .	1 104.3	1 202.9	1 385.6	1 597.3	1 835.7	1 901.8	1 995.4	2 066.1	1 798.1	1 715	1 585.1
15-19. . .	1 037.9	1 131.7	1 264.0	1 467.5	1 693.1	1 864.3	1 911.0	2 014.6	1 945.1	2 034	1 569.8
20-24. . .	1 023.0	1 122.1	1 206.8	1 393.0	1 588.6	1 871.2	1 890.8	1 929.0	2 011.1	1 687	1 677.5
25-29. . .	897.1	966.5	1 076.1	1 218.2	1 406.6	1 693.9	1 827.0	1 824.2	1 930.6	1 974	1 836.6
30-34. . .	763.2	836.7	933.8	1 030.3	1 191.0	1 437.9	1 686.7	1 702.6	1 809.2	1 971	1 744.8
35-39. . .	645.0	729.8	805.1	910.3	1 039.9	1 256.2	1 518.9	1 645.9	1 692.3	1 856	1 883.2
40-44. . .	577.1	671.7	735.4	832.1	909.3	1 079.9	1 300.2	1 540.7	1 592.0	1 720	1 904.2
45-49. . .	471.6	550.6	626.2	692.5	792.6	921.6	1 125.3	1 392.0	1 518.1	1 606	1 811.9
50-54. . .	427.7	482.3	562.7	617.2	699.1	785.6	941.9	1 168.4	1 405.2	1 494	1 653.8
55-59. . .	315.7	366.3	429.8	486.8	539.3	632.2	757.6	953.2	1 203.5	1 368	1 480.7
60-64. . .	298.8	344.1	383.4	447.0	480.0	550.3	612.5	766.2	979.0	1 184	1 328.8
65-69. . .	205.1	233.9	274.2	312.5	357.8	397.1	499.3	603.2	773.4	948	1 148.4
70-74. . .	159.5	178.6	205.7	224.1	268.6	288.7	365.0	425.0	554.5	689	921.9
75-79. . .	94.7	104.2	117.0	131.6	153.1	173.9	208.6	264.5	331.4	425	603.5
80-84. . .	50.9	54.8	61.0	65.6	73.7	89.2	100.8	128.7	158.9	219	300.5
85 & +. .	24.3	25.0	27.9	28.1	33.0	36.1	47.6	58.3	73.5	100	142.0
All ages — Tous âges.	10 659.6	11 902.4	13 410.2	15 270 6	17 025.1	19 097.6	21 076.9	22 346.3	23 336.8	24 189	25 382.0
	Percentages — Pourcentages										
0- 4. . .	12.70	13.03	13.12	13.20	11.90	11.13	10.36	8.39	7.24	6.64	8.10
5- 9. . .	11.35	11.34	11.60	11.79	11.38	10.43	9.99	8.90	8.02	6.58	6.83
10-14. . .	10.36	10.11	10.33	10.46	10.78	9.96	9.47	9.24	7.70	7.09	6.25
15-19. . .	9.74	9.51	9.43	9.61	9.94	9.76	9.07	9.01	8.33	8.41	6.19
20-24. . .	9.60	9.43	9.00	9.12	9.33	9.80	8.97	8.63	8.62	6.97	6.61
25-29. . .	8.42	8.12	8.03	7.98	8.26	8.87	8.67	8.16	8.27	8.16	7.24
30-34. . .	7.16	7.03	6.96	6.75	7.00	7.53	8.00	7.62	7.75	8.15	6.87
35-39. . .	6.05	6.13	6.00	5.96	6.11	6.58	7.21	7.36	7.25	7.67	7.42
40-44. . .	5.41	5.64	5.48	5.45	5.34	5.65	6.17	6.89	6.82	7.11	7.50
45-49. . .	4.42	4.62	4.67	4.53	4.66	4.83	5.34	6.23	6.50	6.64	7.14
50-54. . .	4.01	4.05	4.20	4.04	4.11	4.11	4.47	5.23	6.02	6.18	6.52
55-59. . .	2.96	3.08	3.21	3.19	3.17	3.31	3.59	4.26	5.16	5.66	5.83
60-64. . .	2.80	2.89	2.86	2.93	2.82	2.88	2.91	3.43	4.19	4.89	5.24
65-69. . .	1.92	1.97	2.05	2.05	2.10	2.08	2.37	2.70	3.31	3.92	4.52
70-74. . .	1.50	1.50	1.53	1.47	1.58	1.51	1.73	1.90	2.38	2.85	3.63
75-79. . .	0.89	0.88	0.87	0.86	0.90	0.91	0.99	1.18	1.42	1.76	2.38
80-84. . .	0.48	0.46	0.45	0.43	0.43	0.47	0.48	0.58	0.68	0.91	1.18
85 & +. .	0.23	0.21	0.21	0.18	0.19	0.19	0.23	0.26	0.31	0.41	0.56
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	34.41	34.48	35.05	35.45	34.06	31.52	29.82	26.53	22.96	20.31	21.18
15-44. . .	46.38	45.86	44.90	44.87	45.98	48.19	48.09	47.67	47.04	46.47	41.83
45-64. . .	14.19	14.64	14.94	14.69	14.76	15.13	16.31	19.15	21.87	23.37	24.73
65 & +. .	5.02	5.02	5.11	4.99	5.20	5.16	5.80	6.62	8.10	9.85	12.27
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

17. Great Britain (*concluded*)

Tableau III (*suite*)

17. Grande-Bretagne (*fin*)

Age (in years) (en années)	Both Sexes — Les deux sexes										
	1851	1861	1871	1881	1891	1901	1911	1921	1931	1939	1951
	Numbers in 000's — Nombres en milliers										
0- 4. . .	2 719.6	3 118.5	3 526.9	4 031.5	4 055.8	4 249.7	4 387.2	3 794.2	3 413.6	3 279	4 207.1
5- 9. . .	2 432.2	2 707.6	3 111.3	3 597.5	3 872.8	3 980.0	4 210.6	3 996.4	3 778.4	3 222	3 550.2
10-14. . .	2 230.8	2 428.2	2 796.3	3 205.3	3 675.8	3 811.1	3 989.8	4 149.9	3 633.0	3 450	3 223.6
15-19. . .	2 057.0	2 240.3	2 516.1	2 925.4	3 369.2	3 702.2	3 799.4	3 981.3	3 873.8	4 067	3 076.1
20-24. . .	1 947.1	2 110.0	2 297.2	2 671.9	3 010.0	3 554.2	3 595.2	3 580.3	3 916.0	3 354	3 245.9
25-29. . .	1 700.8	1 802.2	2 035.4	2 336.5	2 662.9	3 203.5	3 464.8	3 336.7	3 746.2	3 886	3 635.3
30-34. . .	1 469.6	1 589.2	1 780.2	1 982.6	2 297.9	2 746.5	3 232.8	3 138.9	3 404.7	3 862	3 429.9
35-39. . .	1 253.5	1 398.7	1 530.6	1 753.2	2 019.2	2 423.3	2 937.9	3 069.4	3 119.2	3 620	3 691.2
40-44. . .	1 122.2	1 296.7	1 405.5	1 595.7	1 752.2	2 096.1	2 508.4	2 909.6	2 955.8	3 179	3 768.5
45-49. . .	921.0	1 066.3	1 200.4	1 313.6	1 519.5	1 782.0	2 166.7	2 696.1	2 834.5	2 968	3 542.0
50-54. . .	827.4	931.0	1 079.4	1 169.5	1 322.7	1 505.5	1 808.4	2 258.8	2 648.2	2 768	3 117.2
55-59. . .	607.1	708.3	823.2	919.7	1 008.1	1 195.3	1 444.7	1 831.3	2 306.5	2 534	2 689.0
60-64. . .	559.4	650.3	721.1	833.0	886.4	1 016.3	1 149.6	1 443.4	1 848.7	2 202	2 376.5
65-69. . .	378.8	434.0	508.7	575.3	651.2	716.5	911.3	1 109.4	1 419.5	1 751	2 011.1
70-74. . .	291.8	324.9	378.4	405.3	478.6	510.5	634.1	740.3	977.0	1 227	1 571.8
75-79. . .	169.6	186.7	210.8	234.9	269.1	301.8	352.5	442.4	560.2	713	1 013.9
80-84. . .	88.3	95.0	105.8	113.9	124.5	148.6	164.6	204.4	252.3	343	485.5
85 & +. .	40.1	40.5	45.0	45.3	52.3	56.9	73.3	86.4	107.6	144	206.1
All ages — Tous âges.	20 816.3	23 128.5	26 072.3	29 710.0	33 028.2	37 000.0	40 831.3	42 769.2	44 795.3	46 568	48 840.9
	Percentages — Pourcentages										
0- 4. . .	13.07	13.48	13.53	13.57	12.28	11.49	10.74	8.87	7.62	7.04	8.61
5- 9. . .	11.69	11.71	11.93	12.11	11.73	10.76	10.31	9.34	8.43	6.92	7.27
10-14. . .	10.72	10.50	10.72	10.79	11.13	10.30	9.77	9.70	8.11	7.41	6.60
15-19. . .	9.88	9.69	9.65	9.85	10.20	10.01	9.30	9.31	8.65	8.73	6.30
20-24. . .	9.35	9.12	8.81	8.99	9.11	9.60	8.80	8.37	8.74	7.20	6.65
25-29. . .	8.17	7.79	7.81	7.87	8.06	8.66	8.49	7.80	8.36	8.34	7.44
30-34. . .	7.06	6.87	6.83	6.67	6.96	7.42	7.92	7.34	7.60	8.29	7.02
35-39. . .	6.02	6.05	5.87	5.90	6.11	6.55	7.20	7.18	6.96	7.77	7.56
40-44. . .	5.39	5.61	5.39	5.37	5.31	5.66	6.14	6.80	6.60	6.83	7.71
45-49. . .	4.43	4.61	4.60	4.42	4.60	4.82	5.31	6.30	6.33	6.37	7.25
50-54. . .	3.97	4.02	4.14	3.94	4.01	4.07	4.43	5.28	5.91	5.94	6.38
55-59. . .	2.92	3.06	3.16	3.10	3.05	3.23	3.54	4.28	5.15	5.44	5.50
60-64. . .	2.69	2.81	2.77	2.80	2.68	2.74	2.81	3.37	4.13	4.73	4.86
65-69. . .	1.82	1.88	1.95	1.94	1.97	1.94	2.23	2.59	3.17	3.76	4.12
70-74. . .	1.40	1.40	1.45	1.36	1.45	1.38	1.55	1.73	2.18	2.63	3.22
75-79. . .	0.81	0.81	0.81	0.79	0.81	0.82	0.86	1.03	1.25	1.53	2.08
80-84. . .	0.42	0.41	0.41	0.38	0.38	0.40	0.40	0.48	0.56	0.74	0.99
85 & +. .	0.19	0.18	0.17	0.15	0.16	0.15	0.18	0.20	0.24	0.31	0.42
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	35.48	35.69	36.18	36.47	35.14	32.55	30.82	27.91	24.16	21.37	22.48
15-44. . .	45.87	45.13	44.36	44.65	45.75	47.90	47.85	46.80	46.91	47.16	42.68
45-64. . .	14.01	14.50	14.67	14.26	14.34	14.86	16.09	19.23	21.52	22.48	23.99
65 & +. .	4.64	4.68	4.79	4.62	4.77	4.69	5.22	6.03	7.40	8.97	10.83
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1901-1939 : *Papers of the Royal Commission on Population.* Vol II. *Reports and Selected Papers of the Statistics Committee.* London, His Majesty's Stationery Office, 1950.

National Registration, *Reports and Selected Papers...*, p. 191.

1951 : 1 per cent sample of census returns. — D'après un sondage à 1 pour 100 des bulletins de recensement.

Table III (*continued*)

18. ITALY

Tableau III (*suite*)

18. ITALIE

Age (in years) (en années)	Male — Masculin							
	1861	1871	1881	1901 [1]	1911 [1]	1921	1936	1949
	Numbers in 000's — Nombres en milliers							
0- 4.	1 494.6	1 570.8	1 751.3	2 099.6	2 196.8	1 848.4	2 220.1	2 137.4
5- 9.	1 188.8	1 483.1	1 530.4	1 813.2	1 911.1	2 102.2	2 213.7	1 999.3
10-14.	1 084.0	1 369.2	1 383.4	1 714.3	1 861.7	2 171.8	2 245.7	2 090.8
15-19.	958.5	1 175.8	1 301.4	1 771.7	1 861.3	2 276.7	1 576.5 [2]	2 064.2 [2]
20-24.	914.6	1 169.0	1 213.1	1 029.6	1 091.4	1 296.9	1 991.8 [3]	
25-29.	911.5	1 027.4	1 049.5	1 072.2	1 130.6	1 332.2	1 839.1	6 900.7
30-34.	720.4	957.4	1 014.6	995.4	1 022.7	1 229.3	1 536.4	
35-39.	849.8	834.7	886.0	952.9	931.3	1 114.5	1 323.6	
40-44.	570.6	847.9	893.2	895.1	883.7	1 042.8	1 113.5	
45-49.	601.5	699.5	691.6	811.1	845.7	965.0	1 031.7	4 780.6
50-54.	437.9	699.9	723.3	761.8	804.9	857.8	948.6	
55-59.	434.4	449.0	538.9	666.2	690.1	789.9	842.5	
60-64.	269.9	487.2	541.5	562.3	624.0	700.6	729.8	798.4
65-69.	219.6	287.9	301.2	417.4	476.6	527.8	588.5	649.7
70-74.	118.1	225.0	247.9	300.5	334.0	392.7	462.9	
75-79.	79.9	101.6	116.7	176.1	183.6	223.8	282.2	1 007.9
80-84.	28.7	62.3	60.5	75.3	84.3	97.1	129.8	
85 & + ...	14.5	24.7	18.8	23.5	30.6	34.2	46.0	
All ages — Tous âges . . .	10 897.3	13 472.4	14 263.3	16 138.2	16 964.4	19 003.7	21 122.4	22 429.0
	Percentages — Pourcentages							
0- 4.	13.72	11.66	12.28	13.01	12.95	9.73	10.51	9.53
5- 9.	10.91	11.01	10.73	11.24	11.27	11.06	10.48	8.19
10-14.	9.95	10.16	9.70	10.62	10.97	11.43	10.63	9.32
15-19.	8.79	8.73	9.12	10.98	10.97	11.98	7.47	9.20
20-24.	8.39	8.68	8.51	6.38	6.43	6.82	9.43	
25-29.	8.36	7.62	7.36	6.64	6.66	7.01	8.71	30.77
30-34.	6.61	7.11	7.12	6.17	6.03	6.47	7.27	
35-39.	7.80	6.20	6.21	5.91	5.49	5.86	6.27	
40-44.	5.24	6.29	6.26	5.55	5.21	5.49	5.27	
45-49.	5.52	5.19	4.85	5.03	4.99	5.08	4.89	21.31
50-54.	4.02	5.20	5.07	4.72	4.74	4.51	4.49	
55-59.	3.99	3.33	3.78	4.13	4.07	4.16	3.99	
60-64.	2.48	3.62	3.80	3.48	3.68	3.69	3.45	3.56
65-69.	2.01	2.14	2.11	2.59	2.81	2.78	2.79	2.90
70-74.	1.08	1.67	1.74	1.86	1.97	2.07	2.19	
75-79.	0.73	0.75	0.82	1.09	1.08	1.18	1.34	4.49
80-84.	0.26	0.46	0.42	0.47	0.50	0.51	0.61	
85 & +.	0.13	0.18	0.13	0.15	0.18	0.18	0.22	
All ages — Tous âges . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé							
0-14.	34.58	32.83	32.71	34.87	35.19	32.22	31.62	...
15-44.	45.19	44.63	44.58	41.63	40.79	43.63	44.42	...
44-64.	16.01	17.34	17.50	17.36	17.48	17.44	16.82	...
65 & +.	4.21	5.20	5.22	6.16	6.54	6.72	7.15	...
All ages — Tous âges . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	...

[1] 1901 and 1911 data are not strictly comparable with the following years on account of territorial changes.

[2] 15-20 age-group.

[3] 20-25 age-group.

[1] Les chiffres de 1901 et 1911 ne sont pas strictement comparables aux chiffres des années suivantes par suite des changements de territoires.

[2] Groupe d'âge 15-20 ans.

[3] Groupe d'âge 20-25 ans.

Table III (*continued*)

18. ITALY (*continued*)

Tableau III (*suite*)

18. ITALIE (*suite*)

Age (in years) (en années)	Female — Féminin							
	1861	1871	1881	1901 [1]	1911 [1]	1921	1936	1949
	Numbers in 000's — Nombres en milliers							
0- 4.	1 465.2	1 527.5	1 688.4	2 016.9	2 115.6	1 769.8	2 141.4	2 044.4
5- 9.	1 156.9	1 434.0	1 478.5	1 751.5	1 839.9	2 027.6	2 153.3	1 923.9
10-14.	1 056.5	1 320.0	1 326.6	1 674.4	1 808.1	2 098.0	2 190.3	2 024.8
15-19.	1 079.2	1 241.1	1 333.9	1 808.9	1 996.8	2 248.0	1 536.8 [2]	2 015.1 [2]
20-24.	933.9	1 175.9	1 233.4	1 053.3	1 197.4	1 386.0	1 958.2 [3]	
25-29.	944.9	1 045.5	1 078.1	1 135.0	1 308.5	1 528.6	1 839.0	7 182.5
30-34.	705.3	966.8	1 041.7	1 055.3	1 146.4	1 400.1	1 582.0	
35-39.	842.4	828.5	890.5	984.1	1 017.9	1 237.6	1 467.6	
40-44.	541.0	844.9	902.3	927.4	946.6	1 100.2	1 320.6	
45-49.	611.1	683.4	689.2	827.8	881.1	984.9	1 216.4	5 410.7
50-54.	403.3	681.9	738.2	798.4	838.3	877.1	1 078.3	
55-59.	443.6	429.7	531.5	675.5	702.6	796.4	914.7	
60-64.	246.9	484.7	548.3	589.9	652.0	726.8	783.2	987.9
65-69.	224.7	268.3	283.6	425.6	478.9	537.0	641.0	777.1
70-74.	106.6	217.2	243.5	307.0	347.1	408.6	504.6	
75-79.	78.8	91.3	103.2	172.5	185.3	224.6	321.1	1 200.9
80-84.	24.9	64.0	62.3	77.9	89.6	109.0	155.8	
85& +.	15.1	26.1	19.7	26.3	34.6	42.2	63.9	
All ages — Tous âges	10 880.3	13 329.0	14 191.9	16 307.7	17 586.7	19 502.5	21 868.2	23 567.3
	Percentages — Pourcentages							
0- 4.	13.46	11.45	11.90	12.37	12.03	9.08	9.79	8.67
5- 9.	10.63	10.76	10.42	10.74	10.46	10.40	9.84	8.16
10-14.	9.71	9.90	9.35	10.27	10.28	10.76	10.01	8.59
15-19.	9.92	9.31	9.40	11.09	11.35	11.53	7.03	8.55
20-24.	8.58	8.82	8.69	6.46	6.81	7.11	8.95	
25-29.	8.68	7.85	7.60	6.96	7.44	7.84	8.41	30.47
30-34.	6.48	7.25	7.34	6.47	6.52	7.18	7.23	
35-39.	7.74	6.22	6.28	6.03	5.79	6.35	6.71	
40-44.	4.97	6.34	6.36	5.69	5.38	5.64	6.04	
45-49.	5.62	5.13	4.86	5.08	5.01	5.05	5.56	22.96
50-54.	3.71	5.12	5.20	4.90	4.77	4.50	4.93	
55-59.	4.08	3.22	3.75	4.14	4.00	4.08	4.18	
60-64.	2.27	3.64	3.86	3.62	3.71	3.73	3.58	4.19
65-69.	2.07	2.01	2.00	2.61	2.72	2.75	2.93	3.30
70-74.	0.98	1.63	1.72	1.88	1.97	2.10	2.31	
75-79.	0.72	0.68	0.73	1.06	1.05	1.15	1.47	5.10
80-84.	0.23	0.48	0.44	0.48	0.51	0.56	0.71	
85& +.	0.14	0.20	0.14	0.17	0.20	0.22	0.29	
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé							
0-14.	33.80	32.11	31.67	33.38	32.77	30.24	29.64	...
15-44.	46.37	45.79	45.67	42.70	43.29	45.65	44.37	...
45-64.	15.68	17.11	17.67	17.74	17.49	17.36	18.25	...
65& +.	4.14	5.00	5.03	6.20	6.45	6.78	7.71	...
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0	...

[1] 1901 and 1911 data are not strictly comparable with the following years on account of territorial changes.

[2] 15-20 age-group.

[3] 20-25 age-group

[1] Les chiffres de 1901 et 1911 ne sont pas strictement comparables aux chiffres des années suivantes par suite des changements de territoires.

[2] Groupe d'âge 15-20 ans.

[3] Groupe d'âge 20-25 ans.

Table III (*continued*)

18. ITALY (*concluded*)

Tableau III (*suite*)

18. ITALIE (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes							
	1861	1871	1881	1901 [1]	1911 [1]	1921	1936	1949
	Numbers in 000's — Nombres en milliers							
0- 4.	2 959.8	3 096.5	3 439.7	4 116.5	4 312.4	3 618.2	4 361.5	4 181.8
5- 9.	2 345.7	2 917.1	3 008.9	3 564.8	3 751.0	4 129.8	4 367.0	3 923.2
10-14.	2 140.4	2 689.1	2 709.9	3 388.7	3 669.8	4 269.9	4 436.0	4 115.6
15-19.	2 037.8	2 416.8	2 635.2	3 580.6	3 858.1	4 524.7	3 113.3 [2]	4 079.3 [2]
20-24.	1 848.5	2 344.9	2 446.5	2 083.0	2 288.8	2 682.9	3 950.1 [3]	
25-29.	1 856.5	2 072.9	2 127.6	2 207.2	2 439.0	2 860.8	3 678.1	14 083.1
30-34.	1 425.7	1.924.2	2.056.3	2 050.8	2.169.2	2 629.4	3 118.4	
35-39.	1 692.2	1 663.2	1 776.5	1 937.0	1 949.2	2 352.1	2 791.2	
40-44.	1 111.6	1 692.8	1 795.5	1 822.5	1 830.3	2 143.0	2 434.1	
45-49.	1 212.6	1 382.8	1 380.8	1 638.9	1 726.8	1 949.8	2 248.1	10 191.3
50-54.	841.2	1 381.9	1 461.4	1 560.2	1 643.2	1 734.9	2 026.8	
55-59.	878.0	878.6	1 070.4	1 341.7	1 392.7	1 586.4	1 757.1	
60-64.	516.8	971.9	1 089.8	1 152.2	1 276.0	1 427.3	1 513.0	1 786.3
65-69.	444.3	556.2	584.8	842.9	955.4	1 064.8	1 229.5	1 426.8
70-74.	224.7	442.2	491.4	607.5	681.2	801.4	967.5	
75-79.	158.6	192.9	219.9	348.5	368.9	448.4	603.3	2 208.7
80-84.	53.4	126.3	122.8	153.2	173.8	206.1	285.6	
85 & +.	29.6	50.8	38.5	49.9	65.2	76.4	109.9	
All ages — Tous âges . . .	21 777.4	26 801.1	28 455.9	32 446.1	34 551.0	38 506.3	42 990.5	45 996.1
	Percentages — Pourcentages							
0- 4.	13.59	11.55	12.09	12.69	12.48	9.40	10.15	9.09
5- 9.	10.77	10.88	10.57	10.99	10.86	10.73	10.16	8.53
10-14.	9.82	10.03	9.52	10.44	10.62	11.09	10.32	8.95
15-19.	9.36	9.02	9.26	11.04	11.17	11.75	7.24	8.87
20-24.	8.49	8.75	8.60	6.42	6.62	6.97	9.19	
25-29.	8.53	7.73	7.48	6.80	7.06	7.43	8.56	30.62
30-34.	6.55	7.18	7.22	6.32	6.28	6.83	7.25	
35-39.	7.77	6.20	6.24	5.97	5.64	6.11	6.49	
40-44.	5.12	6.32	6.31	5.62	5.30	5.57	5.66	
45-49.	5.57	5.16	4.85	5.05	5.00	5.06	5.23	22.15
50-54.	3.86	5.16	5.13	4.81	4.76	4.51	4.71	
55-59.	4.03	3.28	3.76	4.14	4.03	4.12	4.09	
60-64.	2.37	3.63	3.83	3.55	3.69	3.71	3.52	3.88
65-69.	2.04	2.08	2.05	2.60	2.77	2.77	2.86	3.10
70-74.	1.03	1.65	1.73	1.87	1.97	2.08	2.25	
75-79.	0.73	0.72	0.77	1.07	1.07	1.17	1.40	4.80
80-84.	0.25	0.47	0.43	0.47	0.50	0.53	0.66	
85 & +.	0.14	0.19	0.14	0.15	0.19	0.20	0.26	
All ages — Tous âges . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé							
0-14.	34.18	32.46	32.18	34.12	33.96	31.22	30.63	...
15-44.	45.82	45.20	45.11	42.17	42.07	44.66	44.39	...
45-64.	15.83	17.23	17.57	17.55	17.48	17.40	17.55	...
65 & +.	4.19	5.11	5.12	6.16	6.50	6.75	7.43	...
All ages — Tous âges . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	...

Sources : 1861-1881 : J. Bertillon, *Statistique internationale...*
1901, 1911, 1921 : Censimento della popolazione del Regno d'Italia, 1921, vol. XIX, Relazione Generale.
1936 : *Annuario Statistico Italieno*, 1951.
1949 : *Demographic Yearbook*, 1951. — *Annuaire démographique*, 1951.

[1] 1901 and 1911 data are not strictly comparable with the following years on account of territorial changes.
[2] 15-20 age-group.
[3] 20-25 age-group.

[1] Les chiffres de 1901 et 1911 ne sont pas strictement comparables aux chiffres des années suivantes par suite des changements de territoires.
[2] Groupe d'âge 15-20 ans.
[3] Groupe d'âge 20-25 ans.

Table III (*continued*)

19. Netherlands

Tableau III (*suite*)

19. Pays-Bas

Age (in years) (en années)	Male — Masculin										
	1849	1859	1869	1879	1889	1899	1909	1920	1930	1940	1950
	Numbers in 000's — Nombres en milliers										
0- 4. . .	173.5	201.9	234.5	276.4	299.0	334.4	372.7	395.9	426.7	434.2	620.1
5- 9. . .	175.0	180.6	197.2	225.5	255.7	289.7	337.8	376.9	426.8	418.6	477.6
10-14. . .	166.3	158.9	170.3	205.3	243.6	514.8	590.3	362.8	384.3	417.5	420.7
15-19. . .	142.1	161.5	164.7	184.7	212.6			340.5	374.1	421.7	413.6
20-24. . .	134.9	148.8	138.7	155.5	185.1	405.4	462.4	297.8	350.5	375.6	404.4
25-29. . .	127.1	125.1	136.9	144.4	162.2			263.0	320.2	361.7	394.8
30-34. . .	107.2	117.3	126.5	123.7	138.5	316.3	376.6	233.3	282.9	340.2	341.0
35-39. . .	94.0	112.8	111.4	125.2	131.6			212.7	252.5	311.3	335.6
40-44. . .	80.3	95.3	103.6	115.6	112.7	246.3	294.6	196.3	224.0	274.1	317.2
45-49. . .	77.2	81.0	97.3	98.1	112.0			171.0	202.6	242.4	288.8
50-54. . .	66.8	66.4	80.4	88.8	100.7	193.6	217.5	146.5	183.6	211.6	252.1
55-59. . .	50.2	60.5	64.7	80.0	81.7			127.2	154.7	185.9	217.8
60-64. . .	40.3	47.8	49.0	61.0	69.2	79.4	80.5	97.1	125.5	160.0	183.3
65-69. . .	27.1	32.9	40.0	43.8	56.2	58.2	69.6	77.4	99.8	123.8	147.7
70-74. . .	18.4	20.7	26.8	28.0	36.2	41.4	50.1	53.6	65.7	86.6	111.5
75-79. . .	11.3	10.7	14.0	17.0	19.6	26.1	28.3	34.7	40.9	54.5	68.5
80-84. . .	5.0	4.4	5.6	7.6	8.2	15.0	18.7	17.0	19.5	24.2	32.7
85& +. .	2.1	1.8	2.0	2.5	3.5			6.4	8.5	10.1	13.6
All ages — Tous âges.	1 498.8	1 628.4	1 763.6	1 983.1	2 228.3	2 520.6	2 899.1	3 410.1	3 942.8	4 454.0	5 041.0
	Percentages — Pourcentages										
0- 4. . .	11.57	12.40	13.29	13.94	13.42	13.26	12.85	11.61	10.82	9.75	12.30
5- 9. . .	11.67	11.09	11.18	11.37	11.48	11.49	11.65	11.05	10.82	9.40	9.47
10-14. . .	11.09	9.76	9.65	10.35	10.93	20.42	20.36	10.64	9.75	9.37	8.35
15-19. . .	9.48	9.92	9.34	9.31	9.54			9.99	9.49	9.47	8.20
20-24. . .	9.00	9.14	7.86	7.84	8.31	16.08	15.95	8.73	8.89	8.43	8.02
25-29. . .	8.48	7.68	7.76	7.28	7.28			7.71	8.12	8.12	7.83
30-34. . .	7.15	7.21	7.17	6.24	6.22	12.55	12.99	6.84	7.17	7.64	6.76
35-39. . .	6.27	6.93	6.32	6.31	5.91			6.24	6.40	6.99	6.66
40-44. . .	5.36	5.85	5.87	5.83	5.06	9.77	10.16	5.76	5.68	6.15	6.29
45-49. . .	5.15	4.98	5.52	4.95	5.03			5.01	5.14	5.44	5.73
50-54. . .	4.46	4.08	4.56	4.48	4.52	7.68	7.50	4.30	4.66	4.75	5.00
55-59. . .	3.35	3.72	3.67	4.03	3.67			3.73	3.92	4.17	4.32
60-64. . .	2.69	2.94	2.78	3.08	3.11	3.15	2.78	2.85	3.18	3.59	3.64
65-69. . .	1.81	2.02	2.27	2.21	2.52	2.31	2.40	2.27	2.53	2.78	2.93
70-74. . .	1.23	1.27	1.52	1.41	1.62	1.64	1.73	1.57	1.67	1.94	2.21
75-79. . .	0.75	0.66	0.79	0.86	0.88	1.04	0.98	1.02	1.04	1.22	1.36
80-84. . .	0.33	0.27	0.32	0.38	0.37	0.60	0.65	0.50	0.49	0.54	0.65
85& +. .	0.14	0.11	0.11	0.13	0.16			0.19	0.22	0.23	0.27
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	34.33	33.25	34.12	35.66	35.83	. . .	. . .	33.30	31.39	28.52	30.12
15-44. . .	45.74	46.73	44.32	42.81	42.32	. . .	. . .	45.27	45.75	46.80	43.76
45-64. . .	15.65	15.72	16.53	16.54	16.33	. . .	. . .	15.89	16.90	17.95	18.69
65& +. .	4.26	4.33	5.01	4.99	5.55	5.59	5.76	55.5	5.95	6.71	7.42
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	. . .	. . .	100.0	100.0	100.0	10.00

Table III (*continued*)

19. NETHERLANDS (*continued*)

Tableau III (*suite*)

19. PAYS-BAS (*suite*)

Age (in years) (en années)	*Female — Féminin*										
	1849	*1859*	*1869*	*1879*	*1889*	*1899*	*1909*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers										
0- 4. . .	171.1	199.4	232.0	272.9	293.8	328.4	364.7	381.4	409.3	415.1	586.8
5- 9. . .	171.3	177.4	193.3	225.0	254.5	286.8	330.8	366.8	412.4	399.4	454.2
10-14. . .	163.1	155.8	167.6	204.0	242.1	509.8	582.4	354.4	372.1	402.1	403.8
15-19. . .	141.7	159.2	163.3	182.5	212.9			333.8	370.0	408.4	397.3
20-24. . .	140.2	152.7	144.2	157.4	190.6	424.1	477.2	301.0	358.8	365.8	395.8
25-29. . .	130.7	130.5	144.1	149.0	168.0			271.5	331.4	362.7	401.2
30-34. . .	111.1	121.8	132.3	128.8	142.7	329.1	395.3	242.0	294.6	351.1	348.2
35-39. . .	98.6	115.5	114.8	127.9	134.4			220.1	263.3	322.9	347.5
40-44. . .	84.7	97.5	105.8	118.1	115.6	250.6	304.6	203.7	231.6	285.4	332.4
45-49. . .	82.5	85.8	98.9	100.6	114.2			177.9	209.1	252.9	304.4
50-54. . .	72.5	71.2	83.6	92.2	104.6	202.9	225.3	152.5	189.9	219.0	268.3
55-59. . .	59.5	67.0	71.0	84.4	86.8			132.6	161.1	192.1	230.8
60-64. . .	50.0	54.5	55.0	67.0	75.6	86.0	86.8	102.5	131.7	166.7	193.3
65-69. . .	33.8	41.5	47.3	51.5	63.4	65.5	76.4	84.1	106.3	131.0	157.0
70-74. . .	23.2	27.0	31.8	33.2	42.6	48.3	57.0	60.4	70.9	93.7	119.8
75-79. . .	14.6	14.0	18.8	21.5	25.4	32.0	33.8	40.3	46.2	60.2	76.1
80-84. . .	6.6	5.9	7.9	9.7	10.8	20.1	24.7	21.2	23.0	27.7	38.3
85 & +. .	3.0	2.7	2.9	3.8	4.9			8.8	11.3	13.1	17.3
All ages — Tous âges.	1 558.2	1 679.4	1 814.6	2 029.5	2 282.9	2 583.5	2 959.1	3 455.0	3 993.0	4 469.3	5 072.5
	Percentages — Pourcentages										
0- 4. . .	10.98	11.88	12.78	13.44	12.87	12.71	12.33	11.04	10.25	9.29	11.57
5- 9. . .	10.99	10.57	10.65	11.08	11.15	11.10	11.18	10.62	10.33	8.94	8.95
10-14. . .	10.47	9.28	9.23	10.05	10.60	19.73	19.68	10.26	9.32	9.00	7.96
15-19. . .	9.10	9.48	9.00	8.99	9.33			9.66	9.27	9.14	7.83
20-24. . .	9.00	9.09	7.94	7.75	8.35	16.41	16.13	8.71	8.99	8.19	7.80
25-29. . .	8.39	7.77	7.94	7.34	7.36			7.86	8.30	8.12	7.91
30-34. . .	7.13	7.25	7.29	6.34	6.25	12.74	13.36	7.00	7.38	7.86	6.86
35-39. . .	6.33	6.88	6.33	6.30	5.89			6.37	6.59	7.23	6.85
40-44. . .	5.44	5.81	5.83	5.82	5.06	9.70	10.29	5.90	5.80	6.39	6.55
45-49. . .	5.30	5.11	5.45	4.96	5.00			5.15	5.24	5.66	6.00
50-54. . .	4.65	4.24	4.61	4.54	4.58	7.85	7.61	4.41	4.76	4.90	5.29
55-59. . .	3.82	3.99	3.91	4.16	3.80			3.84	4.03	4.30	4.55
60-64. . .	3.21	3.25	3.03	3.30	3.31	3.33	2.93	2.97	3.30	3.73	3.81
65-69. . .	2.17	2.47	2.61	2.54	2.78	2.53	2.58	2.43	2.66	2.93	3.09
70-74. . .	1.49	1.61	1.75	1.64	1.87	1.87	1.93	1.75	1.78	2.10	2.36
75-79. . .	0.94	0.83	1.04	1.06	1.11	1.24	1.14	1.17	1.16	1.35	1.50
80-84. . .	0.42	0.35	0.44	0.48	0.47	0.78	0.83	0.61	0.58	0.62	0.75
85 & +. .	0.19	0.16	0.16	0.19	0.21			0.25	0.28	0.29	0.34
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	32.44	31.73	32.66	34.57	34.62	. . .	. . .	31.92	29.90	27.23	28.48
15-44. . .	45.39	46.28	44.33	42.54	42.24	. . .	. . .	45.50	46.33	46.93	43.80
45-64. . .	16.98	16.59	17.00	16.96	16.69	. . .	. . .	16.37	17.33	18.59	19.65
65 & +. .	5.21	5.42	6.00	5.91	6.44	6.42	6.48	6.21	6.46	7.29	8.04
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

19. NETHERLANDS (*concluded*)

Tableau III (*suite*)

19. PAYS-BAS (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes										
	1849	1859	1869	1879	1889	1899	1909	1920	1930	1940	1950
	Numbers in 000's — Nombres en milliers										
0- 4. . .	344.6	401.3	466.5	549.3	592.8	662.8	737.4	777.3	836.0	849.3	1 206.9
5- 9. . .	346.3	358.0	390.4	450.5	510.3	576.5	668.6	743.7	839.2	818.0	931.8
10-14. . .	329.4	314.7	337.9	409.4	485.7	1 024.6	1 172.7	717.2	756.4	819.6	824.5
15-19. . .	283.7	320.7	327.9	367.2	425.6			674.3	744.1	830.1	810.9
20-24. . .	275.1	301.5	282.9	312.8	375.6	829.5	939.6	598.8	709.3	741.4	800.2
25-29. . .	257.5	255.6	280.9	293.3	330.1			534.5	651.6	724.4	796.0
30-34. . .	218.3	239.1	258.7	252.5	281.2	645.4	771.9	475.3	577.5	691.3	689.2
35-39. . .	192.6	228.2	226.1	253.1	266.0			432.8	515.8	634.2	683.1
40-44. . .	164.9	192.9	209.4	233.7	228.3	496.9	599.2	400.0	455.6	559.5	649.6
45-49. . .	159.7	166.8	196.2	198.7	226.2			348.9	411.7	495.3	593.2
50-54. . .	139.3	137.6	164.0	181.0	205.2	396.5	442.8	299.0	373.5	430.6	520.4
55-59. . .	109.7	127.5	135.7	164.4	168.5			259.8	315.8	378.0	448.6
60-64. . .	90.2	102.3	104.0	128.0	144.8	165.4	167.3	199.6	257.2	326.7	376.6
65-69. . .	60.9	74.3	87.3	95.3	119.6	123.7	146.0	161.5	206.1	254.8	304.7
70-74. . .	41.5	47.7	58.6	61.1	78.8	89.7	107.1	114.0	136.6	180.3	231.3
75-79. . .	25.9	24.7	32.8	38.5	45.0	58.1	62.1	75.0	87.1	114.7	144.6
80-84. . .	11.6	10.3	13.5	17.3	19.1	35.1	43.4	38.2	42.5	51.9	71.0
85 & +. .	5.1	4.5	4.9	6.3	8.4			15.2	19.8	23.2	30.9
All ages — Tous âges.	3 056.5	3 307.7	3 577.7	4 012.4	4 511.2	5.104.2	5 858.1	6 865.1	7 935.8	8 923.3	10 113.5
	Percentages — Pourcentages										
0- 4. . .	11.27	12.13	13.04	13.69	13.14	12.99	12.59	11.32	10.53	9.52	11.94
5- 9. . .	11.33	10.82	10.91	11.23	11.31	11.30	11.41	10.83	10.57	9.17	9.22
10-14. . .	10.78	9.51	9.44	10.20	10.77	20.07	20.02	10.45	9.53	9.19	8.16
15-19. . .	9.28	9.69	9.16	9.15	9.43			9.82	9.38	9.30	8.02
20-24. . .	9.00	9.11	7.91	7.80	8.33	16.25	16.04	8.72	8.94	8.31	7.90
25-29. . .	8.43	7.73	7.85	7.31	7.32			7.79	8.21	8.12	7.87
30-34. . .	7.14	7.23	7.23	6.29	6.23	12.64	13.18	6.92	7.28	7.75	6.82
35-39. . .	6.30	6.90	6.32	6.31	5.90			6.30	6.50	7.11	6.76
40-44. . .	5.39	5.83	5.85	5.83	5.06	9.74	10.23	5.83	5.74	6.27	6.43
45-49. . .	5.22	5.04	5.48	4.95	5.01			5.08	5.19	5.55	5.87
50-54. . .	4.56	4.16	4.58	4.51	4.55	7.77	7.56	4.36	4.71	4.83	5.15
55-59. . .	3.59	3.85	3.79	4.10	3.74			3.78	3.98	4.24	4.44
60-64. . .	2.95	3.09	2.91	3.19	3.21	3.24	2.86	2.91	3.24	3.66	3.73
65-69. . .	1.99	2.25	2.44	2.38	2.65	2.42	2.49	2.35	2.60	2.86	3.00
70-74. . .	1.36	1.44	1.64	1.52	1.75	1.76	1.83	1.66	1.72	2.02	2.29
75-79. . .	0.85	0.75	0.92	0.96	1.00	1.14	1.06	1.09	1.10	1.29	1.43
80-84. . .	0.38	0.31	0.38	0.43	0.42	0.69	0.74	0.56	0.54	0.58	0.70
85 & +. .	0.17	0.14	0.14	0.16	0.19			0.22	0.25	0.26	0.31
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	33.38	32.46	33.39	35.12	35.22	. . .	. . .	32.60	30.63	27.88	29.32
15-44. . .	45.54	46.49	44.32	42.69	42.27	. . .	. . .	45.38	46.05	46.86	43.80
45-64. . .	16.32	16.14	16.76	16.75	16.51	. . .	. . .	16.13	17.12	18.28	19.19
65 & +. .	4.75	4.89	5.52	5.45	6.01	6.01	6.12	5.88	6.21	7.01	7.73
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	. . .	. . .	100.0	100.0	100.0	100.0

Sources : 1849, 1859, 1869, 1879, 1889 : J. Bertillon, *Statistique internationale...*
1899, 1909 : *Jaarcijfers voor het Koninkrijk der Nederlanden*, 1914.
1920, 1930, 1940 : *Jaarcijfers voor Nederland*, 1947-1950.
1950 : *Demographic Yearbook*, 1951. — *Annuaire démographique*, 1951.

Table III (*continued*)

20. NORWAY

Tableau III (*suite*)

20. NORVÈGE

Age (in years) (en années)	*Male — Masculin*								
	1855	*1865*	*1875*	*1891*	*1900*	*1910*	*1920*	*1930*	*1950*
	Numbers in 000's — Nombres en milliers								
0- 4.	102.7	117.0	114.8	133.5	146.1	144.4	149.9	121.3	164.0
5- 9.	86.0	103.4	102.3	119.5	133.3	142.6	143.5	142.1	137.0
10-14.	76.0	91.5	100.2	110.0	123.0	136.5	140.4	145.1	108.6
15-19.	63.8	80.6	92.0	89.9	105.6	113.8	135.1	137.2	104.0
20-24.	62.8	66.8	76.7	66.6	84.6	81.4	118.4	122.0	117.4
25-29.	60.4	56.3	61.5	59.1	69.6	67.6	99.7	110.2	132.9
30-34.	100.3	53.8	53.0	55.4	59.3	66.2	81.7	103.5	132.3
35-39.		54.7	46.4	52.2	55.2	58.9	69.9	91.1	125.9
40-44.	63.9	46.9	46.4	46.0	51.9	52.3	67.2	75.8	116.0
45-49.		42.5	45.5	42.3	48.1	49.1	58.3	64.4	105.2
50-54.	29.0	29.4	42.0	36.6	42.5	46.6	50.0	61.6	96.3
55-59.	25.8	24.6	34.0	36.0	36.9	41.9	45.5	51.7	80.8
60-64.	22.2	21.7	24.3	33.9	30.3	35.5	40.3	42.8	64.0
65-69.	16.8	19.4	17.7	28.9	28.5	29.0	34.1	36.5	49.8
70-74.	15.6	13.5	14.0	20.4	23.4	21.3	25.1	28.8	40.8
75-79.		8.5	9.8	11.5	16.4	16.6	17.0	20.3	27.1
80-84.	4.9	3.4	5.4	5.4	8.5	9.9	8.8	10.9	14.5
85& +.		1.9	2.4	3.1	3.4	5.3	5.4	5.7	8.5
All ages — Tous âges . .	730.2	835.9	888.4	950.3	1 066.6	1 118.9	1 290.3	1 371.0	1 625.1
	Percentages — Pourcentages								
0- 4.	14.06	14.00	12.92	14.05	13.69	12.91	11.62	8.85	10.09
5- 9.	11.78	12.37	11.52	12.57	12.49	12.74	11.12	10.36	8.43
10-14.	10.41	10.95	11.28	11.57	11.53	12.20	10.88	10.58	6.68
15-19.	8.74	9.64	10.36	9.46	9.90	10.17	10.47	10.01	6.40
20-24.	8.60	7.99	8.63	7.01	7.93	7.27	9.18	8.90	7.22
25-29.	8.27	6.74	6.92	6.22	6.52	6.04	7.73	8.04	8.18
30-34.	13.74	6.44	5.96	5.83	5.56	5.92	6.33	7.55	8.14
35-39.		6.54	5.22	5.49	5.17	5.26	5.42	6.64	7.75
40-44.	8.75	5.61	5.22	4.84	4.86	4.67	5.21	5.53	7.14
45-49.		5.08	5.12	4.45	4.51	4.39	4.52	4.70	6.47
50-54.	3.97	3.52	4.73	3.85	3.98	4.16	3.88	4.49	5.93
55-59.	3.53	2.94	3.83	3.79	3.46	3.74	3.53	3.77	4.97
60-64.	3.04	2.60	2.74	3.57	2.84	3.18	3.12	3.12	3.94
65-69.	2.30	2.32	1.99	3.04	2.68	2.59	2.64	2.66	3.06
70-74.	2.14	1.62	1.58	2.15	2.19	1.90	1.95	2.10	2.51
75-79.		1.02	1.10	1.21	1.55	1.49	1.32	1.48	1.67
80-84.	0.67	0.41	0.61	0.57	0.81	0.89	0.67	0.80	0.89
85& +.		0.23	0.27	0.33	0.33	0.48	0.41	0.42	0.53
All ages — Tous âges . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé								
0-14	36.25	37.32	35.72	38.19	37.71	37.85	33.62	29.79	25.20
15-44.	...	42.96	42.31	38.85	39.94	39.33	44.34	46.67	44.83
45-64.	...	14.14	16.42	15.66	14.79	15.47	15.05	16.08	21.31
65& +.	5.11	5.60	5.55	7.30	7.56	7.35	6.99	7.46	8.66
All ages — Tous âges . .	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

20. NORWAY (*continued*)

Tableau III (*suite*)

20. NORVÈGE (*suite*)

Age (in years) (en années)	*Female — Féminin*								
	1855	*1865*	*1875*	*1891*	*1900*	*1910*	*1920*	*1930*	*1950*
	Numbers in 000's — Nombres en milliers								
0- 4	98.8	113.5	111.5	127.9	141.5	138.3	143.5	116.3	155.4
5- 9	83.9	99.7	99.5	114.9	127.9	137.5	137.8	137.0	130.1
10-14	73.0	88.4	97.0	106.5	118.1	132.3	134.9	139.8	104.7
15-19	63.7	80.1	90.7	93.4	107.3	117.3	132.3	132.9	100.4
20-24	70.0	71.4	83.0	82.4	97.8	98.7	122.7	124.0	112.2
25-29	66.4	62.4	69.3	76.4	82.8	86.4	104.8	117.8	128.8
30-34	101.7	56.8	58.5	68.3	71.5	80.3	89.8	110.5	131.1
35-39		57.1	51.0	62.7	67.9	70.3	79.6	95.9	124.3
40-44	66.6	47.7	49.4	54.1	61.1	63.3	74.8	83.7	117.5
45-49		45.4	49.0	48.5	56.7	60.5	64.7	73.9	110.9
50-54	33.1	32.0	44.7	42.1	49.7	55.8	58.1	69.3	102.9
55-59	28.4	27.4	36.7	39.4	42.2	49.8	54.5	58.6	87.0
60-64	25.9	24.7	27.4	38.0	35.0	41.4	47.9	50.9	72.6
65-69	19.9	23.4	20.4	32.4	32.5	34.7	41.3	45.3	59.5
70-74	21.1	16.4	17.3	23.7	27.4	25.8	30.9	36.2	49.2
75-79		11.2	12.6	14.1	19.4	20.1	21.3	26.2	33.6
80-84	7.4	5.2	7.2	7.4	10.9	12.7	11.9	14.7	20.1
85 & +		3.1	4.1	4.6	5.3	7.6	7.8	8.6	12.8
All ages — Tous âges	759.9	865.9	929.3	1 036.8	1 155.0	1 232.8	1 358.6	1 441.6	1 653.1
	Percentages — Pourcentages								
0- 4	13.00	13.11	12.00	12.33	12.25	11.22	10.56	8.07	9.40
5- 9	11.04	11.51	10.71	11.08	11.07	11.15	10.14	9.50	7.87
10-14	9.61	10.21	10.44	10.27	10.23	10.73	9.93	9.70	6.33
15-19	8.38	9.25	9.76	9.01	9.29	9.51	9.73	9.22	6.07
20-24	9.21	8.25	8.93	7.95	8.47	8.00	9.03	8.60	6.79
25-29	8.74	7.21	7.46	7.37	7.17	7.01	7.71	8.17	7.79
30-34	13.38	6.56	6.30	6.59	6.19	6.51	6.61	7.66	7.93
35-39		6.59	5.49	6.05	5.88	5.70	5.86	6.65	7.52
40-44	8.76	5.51	5.32	5.22	5.29	5.13	5.50	5.80	7.11
45-49		5.24	5.27	4.68	4.91	4.91	4.76	5.12	6.71
50-54	4.36	3.70	4.81	4.06	4.30	4.53	4.27	4.81	6.23
55-59	3.74	3.16	3.95	3.80	3.65	4.04	4.01	4.06	5.26
60-64	3.41	2.85	2.95	3.66	3.03	3.36	3.52	3.53	4.39
65-69	2.62	2.70	2.20	3.12	2.81	2.81	3.04	3.14	3.60
70-74	2.78	1.89	1.86	2.29	2.37	2.09	2.28	2.51	2.98
75-79		1.29	1.36	1.36	1.68	1.63	1.58	1.82	2.03
80-84	0.97	0.60	0.77	0.71	0.94	1.04	0.89	1.03	1.22
85 & +		0.36	0.44	0.44	0.47	0.63	0.58	0.61	0.77
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé								
0-14	33.65	34.83	33.15	33.68	33.55	33.10	30.63	27.27	23.60
15-44	...	43.37	43.26	42.19	42.29	41.86	44.44	46.10	43.21
45-64	...	14.95	16.98	16.20	15.89	16.84	16.56	17.52	22.59
65 & +	6.37	6.84	6.63	7.92	8.27	8.20	8.37	9.11	10.60
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

20. NORWAY (*concluded*)

Tableau III (*suite*)

20. NORVÈGE (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes								
	1855	1865	1875	1891	1900	1910	1920	1930	1950
	Numbers in 000's — Nombres en milliers								
0- 4.	201.5	230.5	226.3	261.4	287.6	282.7	293.4	237.6	319.2
5- 9.	169.9	203.1	201.8	234.4	261.3	280.2	281.3	279.1	267.1
10-14.	149.0	179.9	197.2	216.5	241.1	268.8	275.3	284.9	213.3
15-19.	127.5	160.7	182.7	183.3	212.9	231.0	267.4	270.1	204.3
20-24.	132.8	138.2	159.8	148.9	182.4	180.1	241.1	246.0	229.6
25-29.	126.8	118.7	130.8	135.5	152.4	154.0	204.5	228.0	261.7
30-34.	202.0	110.7	111.6	123.7	130.8	146.6	171.5	214.0	263.4
35-39.		111.8	97.4	114.8	123.0	129.2	149.5	187.0	250.3
40-44.	130.5	94.5	95.8	100.1	113.0	115.6	142.0	159.5	233.5
45-49.		87.9	94.5	90.8	104.8	109.6	123.0	138.3	216.2
50-54.	62.1	61.4	86.7	78.7	92.2	102.4	108.1	130.9	199.3
55-59	54.2	52.0	70.7	75.4	79.1	91.7	100.0	110.3	167.8
60-64.	48.1	46.4	51.7	71.9	65.4	76.9	88.2	93.7	136.5
65-69.	36.6	42.8	38.2	61.3	60.9	63.7	75.4	81.8	109.4
70-74.	36.7	29.9	31.3	44.2	50.8	47.2	56.0	65.0	90.0
75-79.		19.7	22.4	25.6	35.8	36.7	38.3	46.5	60.7
80-84.	12.3	8.7	12.6	12.7	19.4	22.7	20.7	25.6	34.7
85& +.		5.0	6.5	7.7	8.7	13.0	13.2	14.3	21.3
All ages — Tous âges . .	1 490.0	1 701.9	1 818.0	1 986.9	2 221.6	2 352.1	2 648.9	2 812.6	3 278.3
	Percentages — Pourcentages								
0- 4.	13.52	13.54	12.45	13.16	12.94	12.02	11.08	8.45	9.74
5- 9.	11.40	11.93	11.10	11.80	11.76	11.91	10.62	9.92	8.15
10-14.	10.00	10.57	10.85	10.90	10.85	11.43	10.39	10.13	6.51
15-19.	8.56	9.44	10.05	9.22	9.58	9.82	10.09	9.60	6.23
20-24.	8.91	8.12	8.79	7.49	8.21	7.66	9.10	8.75	7.01
25-29.	8.51	6.97	7.19	6.82	6.86	6.55	7.72	8.11	7.98
30-34.	13.56	6.50	6.14	6.23	5.89	6.23	6.47	7.61	8.04
35-39.		6.57	5.36	5.78	5.54	5.49	5.64	6.65	7.64
40-44.	8.76	5.55	5.27	5.04	5.09	4.92	5.36	5.67	7.12
45-49.		5.16	5.20	4.57	4.72	4.66	4.64	4.92	6.60
50-54.	4.17	3.61	4.77	3.96	4.15	4.35	4.08	4.65	6.08
55-59.	3.64	3.06	3.89	3.79	3.56	3.90	3.78	3.92	5.12
60-64.	3.23	2.73	2.84	3.62	2.94	3.27	3.33	3.33	4.16
65-69.	2.46	2.51	2.10	3.09	2.74	2.71	2.85	2.91	3.34
70-74.	2.46	1.76	1.72	2.22	2.29	2.01	2.11	2.31	2.75
75-79.		1.16	1.23	1.29	1.61	1.56	1.45	1.65	1.84
80-84.	0.83	0.51	0.69	0.64	0.88	0.97	0.79	0.91	1.05
85& +.		0.29	0.36	0.39	0.39	0.54	0.50	0.51	0.64
All ages — Tous âges . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé								
0-14.	34.92	36.04	34.40	35.86	35.55	35.36	32.09	28.50	24.40
15-44.	...	43.15	42.80	40.58	41.17	40.67	44.38	46.39	44.02
45-64.	...	14.56	16.70	15.94	15.37	16.18	15.83	16.82	21.96
65& +.	5.75	6.23	6.10	7.63	7.91	7.79	7.70	8.29	9.62
All ages — Tous âges . .	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1855, 1865, 1875, 1891 : J. Bertillon, *Statistique internationale...*
1900, 1910 : *Annuaire international de statistique...*
1920, 1930 : *Le mouvement naturel...*
1950 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

21. PORTUGAL

Tableau III (*suite*)

21. PORTUGAL

Age (in years) (en années)	*Male — Masculin*								
	1864	*1878*	*1890*	*1900*	*1910*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers								
0- 4.	292.5	320.6	298.5	323.7	358.2	305.7	388.9	425.0	454.4
5- 9.	222.8	239.1	282.5	309.8	357.2	346.7	387.8	426.8	406.3
10-14.	208.9	220.3	270.6	295.3	324.4	347.9	329.9	408.3	406.0
15-19.	161.4	189.1	225.0	250.9	278.1	306.8	338.3	373.1	404.4
20-24.	156.0	169.7	191.2	217.0	233.2	239.7	303.5	314.8	380.1
25-29.	165.7	172.6	169.1	184.2	195.3	204.3	247.3	297.5	334.6
30-34.	114.9	125.8	154.7	161.9	177.2	175.4	202.7	267.0	263.1
35-39.	165.9	161.4	138.8	141.9	156.1	162.5	190.0	230.2	273.2
40-44.	106.8	101.3	144.6	145.0	151.3	153.1	172.4	194.5	248.0
45-49.	124.2	131.6	117.1	118.8	124.0	139.4	150.8	170.8	210.9
50-54.	61.2	85.2	120.3	123.9	126.7	124.2	144.0	154.0	175.7
55-59.	85.3	105.8	78.0	86.3	92.4	96.0	117.2	125.5	146.2
60-64.	48.3	54.6	93.0	92.2	96.0	91.3	101.9	114.1	125.5
65-69.	45.1	46.3	57.1	51.9	59.0	60.7	71.9	82.0	94.9
70-74.	18.8	20.9	44.3	41.9	47.9	45.3	51.4	57.1	68.6
75-79.	15.7	18.2	20.3	21.6	23.5	23.9	29.8	33.8	40.8
80-84.	5.0	5.8	10.8	13.8	14.3	13.5	14.5	16.9	18.5
85 & +.	3.7	4.1	5.1	5.5	6.7	6.4	7.5	9.5	9.0
All ages — Tous âges . .	2 002.2	2 172.4	2 421.0	2 585.6	2 821.5	2 842.8	3 249.8	3 700.9	4 060.2
	Percentages — Pourcentages								
0- 4.	14.61	14.76	12.33	12.52	12.69	10.75	11.97	11.48	11.19
5- 9.	11.13	11.01	11.67	11.98	12.66	12.19	11.93	11.53	10.01
10-14.	10.43	10.14	11.18	11.42	11.50	12.24	10.15	11.03	10.00
15-19.	8.06	8.70	9.29	9.70	9.86	10.79	10.41	10.08	9.96
20-24.	7.79	7.81	7.90	8.39	8.26	8.43	9.34	8.51	9.36
25-29.	8.28	7.95	6.98	7.12	6.92	7.19	7.61	8.04	8.24
30-34.	5.74	5.79	6.39	6.26	6.28	6.17	6.24	7.21	6.48
35-39.	8.29	7.43	5.73	5.49	5.53	5.72	5.85	6.22	6.73
40-44.	5.34	4.66	5.97	5.61	5.37	5.38	5.30	5.26	6.11
45-49.	6.20	6.06	4.84	4.59	4.39	4.90	4.64	4.62	5.19
50-54.	3.06	3.92	4.97	4.79	4.49	4.37	4.43	4.16	4.33
55-59.	4.26	4.87	3.22	3.35	3.27	3.38	3.61	3.39	3.60
60-64.	2.41	2.51	3.84	3.57	3.41	3.22	3.14	3.08	3.09
65-69.	2.25	2.13	2.36	2.01	2.09	2.14	2.21	2.22	2.34
70-74.	0.94	0.96	1.83	1.62	1.70	1.59	1.58	1.54	1.69
75-79.	0.78	0.84	0.84	0.84	0.83	0.84	0.92	0.91	1.00
80-84.	0.25	0.27	0.45	0.53	0.51	0.47	0.44	0.46	0.46
85 & +.	0.18	0.19	0.21	0.21	0.24	0.23	0.23	0.26	0.22
All ages — Tous âges . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé								
0-14.	36.17	35.91	35.18	35.92	36.85	35.18	34.05	34.04	31.20
15-44.	43.50	42.34	42.26	42.57	42.22	43.68	44.75	45.32	46.88
45-64.	15.93	17.36	16.87	16.30	15.56	15.87	15.82	15.25	16.21
65 & +.	4.40	4.39	5.69	5.21	5.37	5.27	5.38	5.39	5.71
All ages — Tous âges . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

21. PORTUGAL (*continued*)

Tableau III (*suite*)

21. PORTUGAL (*suite*)

Age (in years) (en années)	Female — Féminin								
	1864	1878	1890	1900	1910	1920	1930	1940	1950
	Numbers in 000's — Nombres en milliers								
0- 4.	281.8	313.9	290.9	313.1	348.0	298.4	380.7	404.1	435.4
5- 9.	212.5	230.6	272.4	300.4	346.0	334.5	374.4	409.0	392.3
10-14.	199.7	210.6	254.2	285.1	311.6	334.7	316.4	395.0	393.7
15-19.	203.0	220.4	236.5	264.9	292.4	320.2	344.5	375.4	406.6
20-24.	187.3	194.9	214.2	248.5	278.3	276.0	322.2	315.9	381.6
25-29.	193.9	206.3	196.8	208.3	237.3	242.1	287.9	311.4	346.6
30-34.	129.2	145.0	179.5	188.5	214.2	217.5	239.1	290.0	278.0
35-39.	182.3	183.5	159.2	163.6	182.8	196.0	220.1	265.7	294.1
40-44.	112.5	114.3	163.8	168.6	178.3	186.6	205.0	227.9	276.8
45-49.	138.8	153.2	135.2	139.1	146.7	161.2	181.0	204.3	249.1
50-54.	71.5	98.2	139.0	150.5	156.5	153.8	173.8	192.2	214.9
55-59.	106.3	121.6	94.3	103.9	111.1	118.0	141.7	159.9	185.6
60-64.	55.0	59.4	109.3	115.3	121.5	117.5	128.2	148.3	168.7
65-69.	54.8	57.6	66.3	64.4	73.5	78.1	94.3	112.2	135.1
70-74.	21.6	26.0	52.3	55.7	63.7	62.7	72.5	83.0	99.9
75-79.	19.8	23.3	23.4	27.9	30.5	33.3	43.0	53.1	66.2
80-84.	5.4	7.0	14.3	18.9	21.2	20.9	24.1	30.6	34.6
85& +.	5.2	6.0	7.9	8.5	10.8	10.9	14.6	19.9	21.9
All ages — Tous âges . .	2 180.6	2 371.8	2 609.5	2 825.2	3 124.4	3 162.4	3 563.5	3 997.9	4 381.1
	Percentages — Pourcentages								
0- 4.	12.92	13.23	11.15	11.08	11.14	9.44	10.68	10.11	9.94
5- 9.	9.75	9.72	10.44	10.63	11.08	10.58	10.51	10.23	8.96
10-14.	9.16	8.88	9.74	10.09	9.96	10.59	8.88	9.88	8.99
15-19.	9.31	9.29	9.06	9.38	9.35	10.13	9.67	9.39	9.28
20-24.	8.59	8.22	8.21	8.80	8.91	8.73	9.04	7.90	8.71
25-29.	8.89	8.70	7.54	7.37	7.60	7.66	8.08	7.79	7.91
30-34.	5.92	6.11	6.88	6.67	6.86	6.88	6.71	7.25	6.35
35-39.	8.36	7.74	6.10	5.79	5.85	6.20	6.18	6.65	6.71
40-44.	5.16	4.82	6.28	5.97	5.71	5.90	5.75	5.70	6.32
45-49.	6.37	6.46	5.18	4.92	4.70	5.10	5.08	5.11	5.69
50-54.	3.28	4.14	5.33	5.33	5.00	4.86	4.88	4.81	4.91
55-59.	4.87	5.13	3.61	3.68	3.56	3.72	3.98	4.00	4.24
60-64.	2.52	2.50	4.19	4.08	3.89	3.71	3.60	3.71	3.85
65-69.	2.51	2.43	2.54	2.28	2.35	2.47	2.65	2.80	3.07
70-74.	0.99	1.10	2.00	1.97	2.03	1.98	2.03	2.07	2.27
75-79.	0.91	0.98	0.90	0.99	0.98	1.05	1.20	1.33	1.51
80-84.	0.25	0.30	0.55	0.67	0.68	0.66	0.68	0.77	0.79
85& +.	0.24	0.25	0.30	0.30	0.35	0.34	0.40	0.50	0.50
All ages — Tous âges . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé								
0-14.	31.83	31.83	31.33	31.80	32.18	30.61	30.07	30.22	27.89
15-44.	46.23	44.88	44.07	43.98	44.28	45.50	45.43	44.68	45.28
45-64.	17.04	18.23	18.31	18.01	17.15	17.39	17.54	17.63	18.69
65& +.	4.90	5.06	6.29	6.21	6.39	6.50	6.96	7.47	8.14
All ages — Tous âges . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

21. PORTUGAL (*concluded*)

Tableau III (*suite*)

21. PORTUGAL (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*								
	1864	*1878*	*1890*	*1900*	*1910*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers								
0- 4.	574.3	634.5	589.4	636.8	706.2	604.1	769.6	829.2	889.8
5- 9.	435.3	469.7	554.9	610.2	703.2	681.2	762.2	835.7	798.7
10-14.	408.6	430.9	524.8	580.4	636.0	682.6	646.3	803.4	799.7
15-19.	364.4	409.5	461.5	515.9	570.5	627.0	682.8	748.5	811.0
20-24.	343.2	364.6	405.5	465.5	511.5	515.7	625.7	630.7	761.7
25-29.	359.5	379.0	365.9	392.5	432.6	446.4	535.2	608.9	681.3
30-34.	244.1	270.9	334.2	350.4	391.3	392.9	441.8	556.6	541.1
35-39.	348.2	344.9	298.0	305.5	338.8	358.5	410.1	495.9	567.3
40-44.	219.4	215.6	308.4	313.7	329.6	339.7	377.4	422.4	524.7
45-49.	263.0	284.8	252.4	257.9	270.7	300.6	331.8	375.2	460.0
50-54.	132.6	183.5	259.3	274.4	283.2	278.0	317.8	346.2	390.6
55-59.	191.6	227.4	172.2	190.2	203.6	214.0	258.9	285.4	331.8
60-64.	103.3	114.0	202.2	207.5	217.5	208.8	230.1	262.3	294.2
65-69.	99.9	103.9	123.4	116.3	132.5	138.8	166.2	194.3	230.0
70-74.	40.4	46.8	96.6	97.6	111.6	108.0	123.9	140.1	168.5
75-79.	35.5	41.5	43.7	49.4	54.0	57.2	72.8	87.0	107.0
80-84.	10.3	12.8	25.1	32.7	35.4	34.4	38.6	47.4	53.1
85 & +.	8.9	10.0	13.0	14.0	17.5	17.3	22.1	29.5	30.9
All ages — Tous âges . .	4 182.5	4 544.3	5 030.5	5 410.9	5 945.7	6 005.2	6 813.3	7 698.7	8 441.4
	Percentages — Pourcentages								
0- 4.	13.73	13.96	11.72	11.97	11.88	10.06	11.30	10.77	10.54
5- 9.	10.41	10.34	11.03	11.29	11.83	11.34	11.19	10.86	9.46
10-14.	9.77	9.48	10.43	10.73	10.70	11.37	9.49	10.44	9.48
15-19.	8.71	9.01	9.18	9.53	9.60	10.44	10.02	9.72	9.61
20-24.	8.20	8.02	8.06	8.60	8.60	8.59	9.19	8.19	9.03
25-29.	8.59	8.34	7.27	7.25	7.28	7.43	7.86	7.91	8.07
30-34.	5.84	5.96	6.64	6.48	6.58	6.54	6.49	7.23	6.41
35-39.	8.32	7.59	5.92	5.65	5.70	5.97	6.02	6.44	6.72
40-44.	5.25	4.74	6.13	5.80	5.54	5.66	5.54	5.49	6.22
45-49.	6.29	6.27	5.02	4.77	4.55	5.01	4.87	4.87	5.45
50-54.	3.17	4.04	5.16	5.07	4.76	4.63	4.67	4.50	4.62
55-59.	4.58	5.01	3.42	3.51	3.42	3.56	3.80	3.71	3.93
60-64.	2.47	2.51	4.02	3.83	3.66	3.48	3.37	3.41	3.49
65-69.	2.39	2.29	2.45	2.15	2.33	2.31	2.43	2.52	2.73
70-74.	0.97	1.03	1.92	1.80	1.88	1.80	1.81	1.82	2.00
75-79.	0.85	0.91	0.87	0.91	0.90	0.95	1.06	1.13	1.26
80-84.	0.25	0.28	0.50	0.60	0.60	0.57	0.57	0.61	0.62
85 & +.	0.21	0.22	0.26	0.26	0.29	0.29	0.32	0.38	0.36
All ages — Tous âges . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé								
0-14.	33.91	33.78	33.18	33.79	34.41	32.77	31.98	32.07	29.48
15-44.	44.91	43.66	43.20	43.31	43.30	44.63	45.12	44.98	46.06
45-64.	16.51	17.83	17.62	17.18	16.39	16.68	16.71	16.49	17.49
65 & +.	4.67	4.73	6.00	5.72	5.90	5.92	6.19	6.46	6.97
All ages — Tous âges . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1864, 1878, 1890 : J. Bertillon, *Statistique internationale...*
1900, 1910 : *Annuaire international de statistique...*
1920, 1930 : *Le mouvement naturel...*
1940, 1950 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*)

22. SPAIN [1]

Tableau III (*suite*)

22. ESPAGNE [1]

Age (in years) (en années)	*Male — Masculin*					
	1877	*1910*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers					
0- 4. . . .	1 028.4	1 196.5	1 132.3	1 323.6	1 137.5	1 317.7
5- 9. . . .	839.5	1 173.0	1 175.2	1 313.3	1 389.7	1 250.5
10-14. . . .	816.1	1 226.9	1 372.4	1 153.0	1 376.3	1 179.4
15-19. . . .	711.4	831.2	985.4	1 080.0	1 248.1	2 649.3
20-24. . . .	598.6	769.4	856.6	1 053.3	1 014.9	
25-29. . . .	590.8	728.0	775.1	932.8	952.3	2 065.6
30-34. . . .	579.9	596.2	651.5	802.7	928.6	
35-39. . . .	495.6	635.9	654.7	686.1	825.7	1 737.4
40-44. . . .	502.8	495.7	546.1	656.2	733.5	
45-49. . . .	416.4	538.9	548.8	558.2	627.6	1 442.7
50-54. . . .	447.7	788.6	421.4	530.3	572.0	
55-59. . . .	330.3		436.6	424.0	465.5	991.7
60-64. . . .	304.4	518.2	544.7	1 027.3	422.5	
65-69. . . .	149.3				309.3	
70-74. . . .	99.7	184.6	209.4		208.0	828.2
75-79. . . .	49.4				123.6	
80-84. . . .	23.8	35.4	34.7		56.2	
85 & + . . .	9.7				22.5	
All ages — Tous âges.	7 993.6	9 718.5	10 344.9	11 540.8	12 413.8	13 462.5
	Percentages — Pourcentages					
0- 4. . . .	12.86	12.31	10.95	11.47	9.16	9.79
5- 9. . . .	10.50	12.07	11.36	11.38	11.19	9.29
10-14. . . .	10.21	12.63	13.27	9.99	11.09	8.76
15-19. . . .	8.90	8.55	9.52	9.36	10.05	19.68
20-24. . . .	7.49	7.92	8.28	9.13	8.18	
25-29. . . .	7.39	7.49	7.49	8.08	7.67	15.34
30-34. . . .	7.25	6.13	6.30	6.95	7.48	
35-39. . . .	6.20	6.54	6.33	5.94	6.65	12.90
40-44. . . .	6.29	5.10	5.28	5.69	5.91	
45-49. . . .	5.21	5.55	5.30	4.84	5.06	10.72
50-54. . . .	5.60	8.12	4.07	4.60	4.61	
55-59. . . .	4.13		4.22	3.67	3.75	7.37
60-64. . . .	3.81	5.33	5.27	8.90	3.40	
65-69. . . .	1.87				2.49	
70-74. . . .	1.25	1.90	2.02		1.68	6.15
75-79. . . .	0.62				1.00	
80-84. . . .	0.30	0.36	0.34		0.45	
85 & + . . .	0.12				0.18	
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14. . . .	33.57	37.01	35.58	32.84	31.44	27.84
15-44. . . .	43.52	41.73	43.20	45.15	45.95	47.92
45-64. . . .	18.75	21.26	21.22	22.01	16.82	18.09
65 & + . . .	4.16				5.80	6.15
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0

[1] The results of the censuses in 1857, 1860, 1887 and 1900 have not been included in this table because of their different class-intervals.

[1] Les résultats des recensements de 1857, 1860, 1887 et 1900 ne figurent pas dans ce tableau parce qu'ils se réfèrent à des groupes d'âges différents.

Table III (*continued*)

22. SPAIN [1] (*continued*)

Tableau III (*suite*)

22. ESPAGNE [1] (*suite*)

Age (in years) (en années)	*Female — Féminin*					
	1877	*1910*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers					
0- 4. . . .	1 002.2	1 170.5	1 121.6	1 288.4	1 110.7	1 254.7
5- 9. . . .	817.7	1 154.9	1 154.9	1 271.8	1 369.7	1 184.1
10-14. . . .	787.3	1 229.3	1 369.8	1 138.1	1 365.1	1 147.4
15-19. . . .	776.9	930.5	1 080.1	1 108.5	1 297.1	2 709.6
20-24. . . .	734.2	824.7	910.5	1 097.3	1 167.2	
25-29. . . .	664.2	811.6	869.2	988.4	1 107.3	2 255.1
30-34. . . .	635.8	632.6	697.8	851.0	993.6	
35-39. . . .	509.1	702.0	721.1	745.2	908.1	1 951.0
40-44. . . .	537.3	514.0	592.9	697.4	807.8	
45-49. . . .	421.3	593.1	607.3	601.7	701.8	1 617.5
50-54. . . .	467.1	879.3	444.2	582.8	621.9	
55-59. . . .	323.1		494.0	479.2	529.8	1 186.8
60-64. . . .	316.4	566.0	619.6	1 243.7	513.3	
65-69. . . .	149.7				391.7	
70-74. . . .	106.6	204.4	247.2		268.5	1 194.3
75-79. . . .	49.2				166.8	
80-84. . . .	31.0	48.0	51.8		94.0	
85 & + . . .	14.1				49.8	
All ages — Tous âges.	8 343.4	10 260.9	10 982.0	12 093.5	13 464.2	14 500.5
	Percentages — Pourcentages					
0- 4. . . .	12.01	11.41	10.21	10.65	8.25	8.65
5- 9. . . .	9.80	11.25	10.52	10.52	10.17	8.17
10-14. . . .	9.44	11.98	12.47	9.41	10.14	7.91
15-19. . . .	9.31	9.07	9.84	9.17	9.63	18.69
20-24. . . .	8.80	8.04	8.29	9.07	8.67	
25-29. . . .	7.96	7.91	7.92	8.17	8.23	15.55
30-34. . . .	7.62	6.16	6.35	7.04	7.38	
35-39. . . .	6.10	6.84	6.57	6.16	6.74	13.45
40-44. . . .	6.44	5.01	5.40	5.77	6.00	
45-49. . . .	5.05	5.78	5.53	4.98	5.21	11.15
50-54. . . .	5.60	8.57	4.04	4.82	4.62	
55-59. . . .	3.87		4.50	3.96	3.94	8.19
60-64. . . .	3.79	5.52	5.64	10.28	3.81	
65-69. . . .	1.80				2.91	
70-74. . . .	1.28	1.99	2.25		1.99	8.24
75-79. . . .	0.59				1.24	
80-84. . . .	0.37	0.47	0.47		0.70	
85 & + . . .	0.17				0.37	
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14. . . .	31.25	34.64	33.20	30.58	28.56	24.73
15-44. . . .	46.23	43.03	44.37	45.38	46.65	47.69
45-64. . . .	18.31	22.33	22.43	24.04	17.58	19.34
65 & + . . .	4.21				7.21	8.24
All ages — âges Tous.	100.0	100.0	100.0	100.0	100.0	100.0

[1] The results of the censuses in 1857, 1860, 1887 and 1900 have not been included in this table because of their different class-intervals.

[1] Les résultats des recensements de 1857, 1860, 1887 et 1900 ne figurent pas dans ce tableau parce qu'ils se réfèrent à des groupes d'âges différents.

Table III (*continued*)

22. SPAIN [1] (*concluded*)

Tableau III (*suite*)

22. ESPAGNE [1] (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes					
	1877	1910	1920	1930	1940	1950
	Numbers in 000's — Nombres en milliers					
0- 4. . . .	2 030.6	2 367.0	2 253.9	2 612.0	2 248.2	2 572.4
5- 9. . . .	1 657.2	2 327.9	2 330.1	2 585.1	2 759.4	2 434.6
10-14. . . .	1 603.4	2 456.2	2 742.2	2 291.1	2 741.4	2 326.8
15-19. . . .	1 488.3	1 761.7	2 065.5	2 188.5	2 545.2	5 358.9
20-24. . . .	1 332.8	1 594.1	1 767.1	2 150.6	2 182.1	
25-29. . . .	1 255.0	1 539.6	1 644.3	1 921.2	2 059.6	4 320.7
30-34. . . .	1 215.5	1 228.8	1 349.3	1 653.7	1 922.1	
35-39. . . .	1 004.7	1 337.9	1 375.8	1 431.3	1 733.8	3 688.4
40-44. . . .	1 040.0	1 009.7	1 139.0	1 353.6	1 541.3	
45-49. . . .	837.6	1 132.0	1 156.1	1 159.9	1 329.4	3 060.3
50-54. . . .	914.9	1 667.9	865.6	1 113.1	1 193.9	
55-59. . . .	653.4		930.6	903.2	995.3	2 178.5
60-64. . . .	619.8	1 084.2	1 164.3		935.9	
65-69. . . .	299.0				701.0	
70-74. . . .	206.3	389.0	456.6	2 271.0	476.5	
75-79. . . .	98.6				290.4	2 022.5
80-84. . . .	54.9	83.4	86.5		150.2	
85& + . . .	23.8				72.3	
All ages — Tous âges.	16 335.8	19 979.4	21 326.9	23 634.3	25 878.0	27 963.1
	Percentages — Pourcentages					
0- 4. . . .	12.43	11.85	10.57	11.05	8.69	9.20
5- 9. . . .	10.14	11.65	10.92	10.94	10.66	8.71
10-14. . . .	9.82	12.29	12.86	9.69	10.59	8.32
15-19. . . .	9.11	8.82	9.68	9.26	9.83	19.17
20-24. . . .	8.16	7.98	8.29	9.10	8.43	
25-29. . . .	7.68	7.70	7.71	8.13	7.96	15.45
30-34. . . .	7.44	6.15	6.33	7.00	7.43	
35-39. . . .	6.15	6.70	6.45	6.06	6.70	13.19
40-44. . . .	6.37	5.05	5.34	5.73	5.96	
45-49. . . .	5.13	5.66	5.42	4.90	5.14	10.94
50-54. . . .	5.60	8.35	4.06	4.71	4.61	
55-59. . . .	4.00		4.36	3.82	3.85	7.79
60-64. . . .	3.79	5.43	5.46		3.62	
65-69. . . .	1.83				2.71	
70-74. . . .	1.26	1.95	2.14	9.61	1.84	
75-79. . . .	0.60				1.12	7.23
80-84. . . .	0.34	0.42	0.41		0.58	
85& + . . .	0.15				0.28	
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé					
0-14. . . .	32.39	35.79	34.35	31.68	29.94	26.23
15-44. . . .	44.91	42.40	43.80	45.28	46.31	47.81
45-64. . . .	18.52	21.81	21.85	23.04	17.22	18.73
65& + . . .	4.18				6.53	7.23
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1877 : J. Bertillon, *Statistique internationale...*
1910, 1920, 1930 : *Le mouvement naturel...*
1940, 1950 : *Demographic Yearbook.* — *Annuaire démographique.*

[1] The results of the censuses in 1857, 1860, 1887 and 1900 have not been included in this table because of their different class-intervals.

[1] Les résultats des recensements de 1857, 1860, 1887 et 1900 ne figurent pas dans ce tableau parce qu'ils se réfèrent à des groupes d'âges différents.

Table III (*continued*)

Tableau III (*suite*)

23. Sweden

23. Suède

Age (in years) (en années)	Male — Masculin										
	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
	Numbers in 000's — Nombres en milliers										
0- 4. . .	220.1	258.8	248.4	284.7	295.0	299.7	316.5	288.2	230.3	227.2	307.8
5- 9. . .	185.8	205.1	243.4	245.7	265.2	278.4	295.3	292.1	267.3	208.8	299.7
10-14. . .	167.5	186.0	222.5	221.9	246.6	267.8	279.5	301.9	279.4	227.0	233.6
15-19. . .	170.0	176.6	189.1	227.1	219.3	247.7	260.4	283.1	284.4	264.5	208.3
20-24. . .	153.3	154.3	160.0	193.2	170.1	215.5	227.3	256.7	280.1	273.4	228.0
25-29. . .	150.6	150.5	145.0	156.7	166.0	175.3	198.3	223.0	250.4	276.5	267.7
30-34. . .	124.5	138.3	130.6	137.4	149.1	144.1	180.0	200.3	227.6	274.8	275.8
35-39. . .	105.2	138.1	130.0	129.2	131.3	146.4	155.7	180.4	204.4	247.6	280.9
40-44. . .	86.5	111.1	119.3	116.6	119.2	135.0	131.5	166.3	186.9	223.1	276.8
45-49. . .	79.7	90.3	117.7	114.6	112.9	118.4	133.7	144.1	169.0	197.2	239.3
50-54. . .	71.7	69.5	92.2	103.2	100.8	106.2	121.7	120.3	153.6	176.6	217.5
55-59. . .	60.7	61.8	72.1	98.1	97.0	97.8	103.9	118.8	130.3	154.7	180.6
60-64. . .	45.4	51.5	52.1	72.8	83.1	83.2	89.1	103.3	103.6	134.2	156.7
65-69. . .	30.3	40.1	41.4	51.6	73.2	74.3	76.2	82.0	95.2	105.5	128.6
70-74. . .	20.6	23.5	28.4	31.5	47.3	55.5	57.4	62.1	73.7	73.5	100.0
75-79. . .	10.0	12.0	16.4	19.6	26.5	38.7	41.4	42.3	47.3	53.9	64.5
80-84. . .	4.2	5.2	5.9	8.4	10.7	16.7	21.2	22.2	25.1	41.6	30.3
85 & +. .	1.4	1.5	1.8	3.0	4.1	5.6	9.6	11.1	12.1		17.1
All ages — Tous âges.	1 687.5	1 874.2	2 016.3	2 215.3	2 317.4	2 506.3	2 698.7	2 898.3	3 020.7	3 160.1	3 513.2
	Percentages — Pourcentages										
0- 4. . .	13.04	13.81	12.32	12.85	12.73	11.96	11.73	9.94	7.62	7.19	8.76
5- 9. . .	11.01	10.94	12.07	11.09	11.45	11.11	10.94	10.08	8.85	6.61	8.53
10-14. . .	9.92	9.93	11.04	10.02	10.64	10.69	10.35	10.42	9.25	7.18	6.65
15-19. . .	10.07	9.42	9.38	10.25	9.46	9.88	9.65	9.77	9.41	8.37	5.93
20-24. . .	9.08	8.23	7.94	8.72	7.34	8.60	8.42	8.86	9.27	8.65	6.49
25-29. . .	8.92	8.03	7.19	7.07	7.16	7.00	7.35	7.69	8.29	8.75	7.62
30-34. . .	7.38	7.38	6.48	6.20	6.44	5.75	6.67	6.91	7.53	8.70	7.85
35-39. . .	6.23	7.37	6.45	5.83	5.67	5.84	5.77	6.22	6.76	7.84	8.00
40-44. . .	5.12	5.93	5.92	5.26	5.14	5.39	4.87	5.74	6.19	7.06	7.88
45-49. . .	4.72	4.82	5.84	5.17	4.87	4.72	4.95	4.97	5.59	6.24	6.81
50-54. . .	4.25	3.71	4.57	4.66	4.35	4.24	4.51	4.15	5.08	5.59	6.19
55-59. . .	3.60	3.30	3.58	4.43	4.19	3.90	3.85	4.10	4.31	4.90	5.14
60-64. . .	2.69	2.75	2.58	3.29	3.59	3.32	3.30	3.56	3.43	4.25	4.46
65-69. . .	1.80	2.14	2.05	2.33	3.16	2.96	2.82	2.83	3.15	3.34	3.66
70-74. . .	1.22	1.25	1.41	1.42	2.04	2.21	2.13	2.14	2.44	2.32	2.85
75-79. . .	0.59	0.64	0.81	0.88	1.14	1.54	1.53	1.46	1.56	1.70	1.84
80-84. . .	0.25	0.28	0.29	0.38	0.46	0.67	0.78	0.77	0.83	1.32	0.86
85 & +. .	0.08	0.08	0.09	0.14	0.18	0.22	0.36	0.38	0.40		0.49
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	33.97	34.68	35.43	33.96	34.82	33.76	33.02	30.44	25.72	20.98	23.94
15-44. . .	46.80	46.36	43.36	43.33	41.21	42.46	42.73	45.19	47.45	49.37	43.77
45-64. . .	15.26	14.58	16.57	17.55	17.00	16.18	16.61	16.78	18.41	20.98	22.60
65 & +. .	3.94	4.39	4.56	5.15	6.98	7.60	7.62	7.58	8.38	8.68	9.70
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

23. SWEDEN (*continued*)

Tableau III (*suite*)

23. SUÈDE (*suite*)

Age (in years) (en années)	Female — Féminin										
	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
	Numbers in 000's — Nombres en milliers										
0- 4. . .	217.7	254.6	242.6	278.0	287.6	289.4	303.0	276.1	222.3	218.0	295.9
5- 9. . .	185.5	202.8	241.1	240.4	257.9	269.4	286.2	281.4	257.6	200.4	285.0
10-14. . .	168.2	185.6	221.3	217.5	241.1	261.5	270.6	289.6	268.6	219.8	226.1
15-19. . .	170.3	177.4	188.5	224.8	213.5	237.4	252.0	274.2	273.9	255.5	206.0
20-24. . .	157.5	159.0	167.7	199.9	178.7	210.0	230.2	251.6	275.2	264.9	227.9
25-29. . .	155.0	156.0	158.9	167.0	181.2	180.0	205.2	229.6	256.0	268.6	266.2
30-34. . .	129.9	146.3	143.9	150.8	168.3	157.6	188.2	212.9	236.0	269.7	265.6
35-39. . .	111.7	145.3	141.4	143.8	145.7	164.1	165.4	191.3	216.7	250.6	273.4
40-44. . .	92.7	119.0	130.9	130.3	134.0	153.6	146.0	175.6	201.5	229.5	271.0
45-49. . .	89.3	100.7	129.0	127.5	128.8	133.1	151.7	153.7	180.0	208.5	243.2
50-54. . .	83.0	80.4	104.1	117.1	116.1	124.5	140.5	134.5	163.1	190.2	216.2
55-59. . .	74.2	74.5	85.5	112.3	111.2	114.1	119.3	137.1	140.0	166.2	196.6
60-64. . .	60.2	64.4	64.1	85.9	97.8	99.0	105.0	122.2	118.1	144.8	171.3
65-69. . .	42.7	53.1	54.1	64.9	87.5	88.5	92.3	97.7	112.9	116.1	142.5
70-74. . .	31.1	34.0	38.9	41.8	58.4	68.6	71.7	76.4	89.9	86.5	112.0
75-79. . .	16.1	19.1	25.0	28.2	35.9	49.4	52.8	54.7	59.1	67.0	71.7
80-84. . .	7.5	9.4	10.6	13.9	16.4	22.9	28.8	30.8	32.8	54.9	37.6
85& +. .	3.1	3.3	4.0	6.2	7.9	9.6	14.8	16.9	17.7		22.6
All ages — Tous âges.	1 795.7	1 984.9	2 151.6	2 350.3	2 468.0	2 629.8	2 823.7	3 006.2	3 121.3	3 211.2	3 530.8
	Percentages — Pourcentages										
0- 4. . .	12.12	12.83	11.27	11.83	11.65	11.00	10.73	9.18	7.12	6.79	8.38
5- 9. . .	10.33	10.22	11.20	10.23	10.45	10.24	10.13	9.36	8.25	6.24	8.07
10-14. . .	9.37	9.35	10.28	9.26	9.77	9.94	9.58	9.63	8.61	6.84	6.40
15-19. . .	9.48	8.94	8.76	9.57	8.65	9.03	8.92	9.12	8.78	7.96	5.83
20-24. . .	8.77	8.01	7.79	8.51	7.24	7.98	8.15	8.37	8.82	8.25	6.45
25-29. . .	8.63	7.86	7.38	7.11	7.34	6.84	7.27	7.64	8.20	8.36	7.54
30-34. . .	7.23	7.37	6.69	6.42	6.82	5.99	6.66	7.08	7.56	8.40	7.52
35-39. . .	6.22	7.32	6.57	6.12	5.90	6.24	5.86	6.36	6.94	7.80	7.74
40-44. . .	5.16	5.99	6.08	5.54	5.43	5.84	5.17	5.84	6.45	7.15	7.67
45-49. . .	4.97	5.07	5.99	5.43	5.22	5.06	5.37	5.11	5.77	6.49	6.89
50-54. . .	4.62	4.05	4.84	4.98	4.70	4.62	4.98	4.47	5.22	5.92	6.12
55-59. . .	4.13	3.75	3.97	4.78	4.51	4.34	4.22	4.56	4.48	5.18	5.57
60-64. . .	3.35	3.24	2.98	3.66	3.96	3.76	3.72	4.06	3.78	4.51	4.85
65-69. . .	2.38	2.68	2.51	2.76	3.55	3.36	3.27	3.25	3.62	3.62	4.04
70-74. . .	1.73	1.71	1.81	1.78	2.37	2.61	2.54	2.54	2.88	2.69	3.17
75-79. . .	0.90	0.96	1.16	1.20	1.45	1.88	1.87	1.82	1.89	2.09	2.03
80-84. . .	0.42	0.47	0.49	0.59	0.66	0.87	10.2	10.2	1.05	1.71	1.06
85& +. .	0.17	0.17	0.19	0.26	0.32	0.36	0.52	0.56	0.57		0.64
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	31.82	32.40	32.75	31.32	31.87	31.18	30.44	28.17	23.98	19.87	22.85
15-44. . .	45.49	45.49	43.27	43.27	41.38	41.92	42.03	44.41	46.75	47.92	42.75
45-64. . .	17.07	16.11	17.78	18.85	18.39	17.78	18.29	18.20	19.25	22.10	23.43
65& +. .	5.60	5.99	6.16	6.59	8.35	9.08	9.22	9.19	10.01	10.11	10.94
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

23. SWEDEN (*concluded*)

Tableau III (*suite*)

23. SUÈDE (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*										
	1850	*1860*	*1870*	*1880*	*1890*	*1900*	*1910*	*1920*	*1930*	*1940*	*1950*
	Numbers in 000's — Nombres en milliers										
0- 4. . .	437.7	513.5	491.0	562.7	582.6	589.1	619.5	564.3	452.5	445.2	603.7
5- 9. . .	371.3	407.9	484.5	486.1	523.1	547.8	581.6	573.5	524.9	409.2	584.7
10-14. . .	335.7	371.6	443.8	439.4	487.6	529.4	550.1	591.5	548.0	446.8	459.7
15-19. . .	340.2	354.1	377.6	451.9	432.8	485.2	512.4	557.3	558.3	520.0	414.3
20-24. . .	310.8	313.3	327.7	393.1	348.8	425.6	457.5	508.3	555.3	538.3	455.9
25-29. . .	305.6	306.5	303.9	323.7	347.1	355.3	403.6	452.6	506.4	545.1	533.9
30-34. . .	254.5	284.6	274.4	288.2	317.3	301.7	368.2	413.2	463.6	544.5	541.4
35-39. . .	216.8	283.4	271.4	273.0	277.0	310.5	321.0	371.8	421.1	498.2	554.3
40-44. . .	178.9	230.1	250.3	246.9	253.3	288.6	277.5	341.9	388.3	452.6	547.8
45-49. . .	169.0	191.0	246.7	242.1	241.6	251.5	285.4	297.8	349.1	405.7	482.5
50-54. . .	154.7	149.9	196.3	220.3	216.8	227.7	262.2	254.8	316.8	366.8	433.7
55-59. . .	135.0	136.3	157.6	210.4	208.3	211.9	223.3	255.9	270.2	320.8	377.2
60-64. . .	105.5	115.9	116.1	158.7	180.9	182.3	194.0	225.5	221.7	279.0	328.0
65 69. . .	72.9	93.2	95.5	116.4	160.6	162.8	168.4	179.6	208.2	221.5	271.1
70-74. . .	51.7	57.5	67.2	73.3	105.7	124.1	129.0	138.6	163.6	160.0	212.0
75-79. . .	26.0	31.1	41.4	47.8	62.4	88.1	94.1	97.0	106.4	121.0	136.2
80-84. . .	11.6	14.6	16.6	22.2	27.0	39.6	50.0	53.0	57.9	96.6	67.9
85 & +. .	4.5	4.8	5.8	9.2	12.0	15.1	24.4	27.9	29.8		39.7
All ages — Tous âges.	3 482.4	3 859.3	4 167.8	4 565.4	4 784.9	5 136.3	5 522.2	5 904.5	6 142.1	6 371.3	7 044.0
	Percentages — Pourcentages										
0- 4. . .	12.57	13.31	11.78	12.33	12.18	11.47	11.22	9.56	7.37	6.99	8.57
5- 9. . .	10.66	10.57	11.62	10.65	10.93	10.66	10.53	9.71	8.55	6.42	8.30
10-14. . .	9.64	9.63	10.65	9.63	10.19	10.31	9.96	10.02	8.92	7.01	6.53
15-19. . .	9.77	9.18	9.06	9.90	9.04	9.45	9.28	9.44	9.09	8.16	5.88
20-24. . .	8.93	8.12	7.86	8.61	7.29	8.29	8.28	8.61	9.04	8.45	6.47
25-29. . .	8.78	7.94	7.29	7.09	7.25	6.92	7.31	7.67	8.24	8.56	7.58
30-34. . .	7.31	7.37	6.58	6.31	6.63	5.87	6.67	7.00	7.55	8.55	7.68
35-39. . .	6.23	7.34	6.51	5.98	5.79	6.04	5.81	6.30	6.86	7.82	7.87
40-44. . .	5.14	5.96	6.01	5.41	5.29	5.62	5.02	5.79	6.32	7.10	7.78
45-49. . .	4.85	4.95	5.92	5.30	5.05	4.90	5.17	5.04	5.68	6.37	6.85
50-54. . .	4.44	3.88	4.71	4.83	4.53	4.43	4.75	4.31	5.16	5.76	6.16
55-59. . .	3.88	3.53	3.78	4.61	4.35	4.12	4.04	4.33	4.40	5.04	5.35
60-64. . .	3.03	3.00	2.79	3.48	3.78	3.55	3.51	3.82	3.61	4.38	4.66
65-69. . .	2.09	2.42	2.29	2.55	3.36	3.17	3.05	3.04	3.39	3.48	3.85
70-74. . .	1.48	1.49	1.61	1.61	2.21	2.42	2.34	2.35	2.66	2.51	3.01
75-79. . .	0.75	0.81	0.99	1.05	1.30	1.72	1.70	1.64	1.73	1.90	1.93
80-84. . .	0.33	0.38	0.40	0.49	0.56	0.77	0.91	1.37	0.94	1.52	0.96
85 & +. .	0.13	0.12	0.14	0.20	0.25	0.29	0.44		0.48		0.56
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé										
0-14. . .	32.87	33.51	34.05	32.61	33.30	32.44	31.71	29.29	24.84	20.42	23.40
15-44. . .	46.16	45.91	43.31	43.30	41.29	42.19	42.37	44.81	47.10	48.64	43.26
45-64. . .	16.20	15.36	17.20	18.22	17.71	17.00	17.47	17.50	18.85	21.55	23.02
65 & +. .	4.78	5.22	5.43	5.90	7.68	8.37	8.44	8.40	9.20	9.41	10.31
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1850-1890 : J. Bertillon, *Statistique internationale...*
1900 : *Statistisk Tidskrift*, 1904.
1910 : *Statistisk Arsbork*, 1914.
1920 : *Folkräkningen den 31 December 1920.*
1930 : *Statistisk Arsbork*, 1937.
1940 : *Statistisk Arsbork*, 1944.
1950 : *Statistisk Tidskrift, 3*, 1952.

Table III (*continued*)

Tableau III (*suite*)

24. SWITZERLAND

24. SUISSE

Age (in years) (en années)	Male — Masculin									
	1860	1870	1880	1888	1900	1910	1920	1930	1941	1950
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	137.1	147.7	167.3	162.4	189.4	203.2	166.4	164.8	155.2	210.9
5- 9. . . .	115.2	140.8	149.9	155.0	168.6	197.4	183.3	175.7	159.6	199.8
10-14. . . .	116.9	128.3	136.9	153.5	156.9	187.7	195.7	164.4	164.3	155.6
15-19. . . .	121.4	110.4	134.3	135.6	159.2	179.6	190.6	180.5	171.6	164.2
20-24. . . .	111.1	101.2	114.0	118.1	147.6	154.9	165.0	182.1	163.2	167.7
25-29. . . .	97.3	102.2	97.8	109.5	137.2	152.7	142.6	169.7	165.6	173.0
30-34. . . .	93.8	94.8	94.5	91.8	118.2	145.1	131.0	152.0	174.7	157.2
35-39. . . .	84.5	86.1	94.0	85.8	107.4	128.7	129.4	133.8	165.9	168.7
40-44. . . .	73.5	81.6	85.6	81.3	92.5	109.5	125.7	122.0	149.8	173.7
45-49. . . .	66.7	72.7	74.9	79.1	75.6	97.1	111.8	118.0	129.0	160.1
50-54. . . .	60.5	61.1	67.9	68.3	69.1	80.3	93.0	110.5	112.3	138.4
55-59. . . .	52.5	53.2	57.8	57.7	64.5	61.7	79.0	93.3	102.9	114.4
60-64. . . .	40.7	44.4	44.1	49.1	52.4	51.6	60.5	72.0	89.4	94.2
65-69. . . .	27.3	34.5	33.8	37.9	38.8	42.6	41.4	54.9	70.2	79.2
70-74. . . .	19.9	21.4	22.6	22.1	26.8	28.7	28.4	35.3	44.9	58.9
75-79. . . .	10.2	10.4	12.8	12.6	15.2	15.8	17.4	18.4	26.9	35.1
80-84. . . .	4.5	4.8	4.8	5.2	5.8	6.8	7.4	8.0	11.2	15.3
85& + . . .	1.5	1.6	1.4	1.7	1.8	2.3	2.5	3.0	3.6	5.7
All ages — Tous âges.	1 234.6	1 297.2	1 394.4	1 426.7	1 627.0	1 845.7	1 871.1	1 958.4	2 060.3	2 272.1
	Percentages — Pourcentages									
0- 4. . . .	11.10	11.39	12.00	11.38	11.64	11.01	8.89	8.42	7.53	9.28
5- 9. . . .	9.33	10.86	10.75	10.86	10.36	10.69	9.80	8.97	7.75	8.79
10-14. . . .	9.47	9.89	9.82	10.76	9.64	10.17	10.46	8.40	7.98	6.85
15-19. . . .	9.83	8.51	9.63	9.50	9.78	9.73	10.19	9.22	8.33	7.23
20-24. . . .	9.00	7.80	8.18	8.28	9.07	8.39	8.82	9.30	7.92	7.38
25-29. . . .	7.88	7.88	7.02	7.67	8.43	8.27	7.62	8.67	8.04	7.61
30-34. . . .	7.60	7.31	6.78	6.43	7.26	7.86	7.00	7.76	8.48	6.92
35-39. . . .	6.84	6.64	6.74	6.01	6.60	6.97	6.92	6.83	8.05	7.42
40-44. . . .	5.95	6.29	6.14	5.70	5.69	5.93	6.72	6.23	7.27	7.64
45-49. . . .	5.40	5.61	5.37	5.54	4.65	5.26	5.98	6.03	6.26	7.05
50-54. . . .	4.90	4.71	4.87	4.79	4.25	4.35	4.97	5.64	5.45	6.09
55-59. . . .	4.25	4.10	4.15	4.04	3.96	3.34	4.22	4.76	4.99	5.03
60-64. . . .	3.30	3.42	3.16	3.44	3.22	2.80	3.23	3.68	4.34	4.15
65-69. . . .	2.21	2.66	2.42	2.66	2.38	2.31	2.21	2.80	3.41	3.49
70-74. . . .	1.61	1.65	1.62	1.55	1.65	1.55	1.52	1.80	2.18	2.59
75-79. . . .	0.83	0.80	0.92	0.88	0.93	0.86	0.93	0.94	1.31	1.54
80-84. . . .	0.36	0.37	0.34	0.36	0.36	0.37	0.40	0.41	0.54	0.67
85& + . . .	0.12	0.12	0.10	0.12	0.11	0.12	0.13	0.15	0.17	0.25
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	29.90	32.14	32.57	33.00	31.64	31.87	29.15	25.79	23.26	24.92
15-44. . . .	47.10	44.43	44.49	43.59	46.83	47.15	47.27	48.01	48.09	44.20
45-64. . . .	17.85	17.84	17.55	17.81	16.08	15.75	18.40	20.11	21.04	22.32
65& + . . .	5.13	5.60	5.40	5.57	5.43	5.21	5.19	6.10	7.61	8.54
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

Tableau III (*suite*)

24. SWITZERLAND (*continued*)

24. SUISSE (*suite*)

Age (in years) (en années)	Female — Féminin									
	1860	1870	1880	1888	1900	1910	1920	1930	1941	1950
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	138.0	148.6	167.2	161.7	188.8	200.5	162.5	160.4	150.3	201.3
5- 9. . . .	116.4	141.2	149.3	154.9	168.2	197.0	180.8	172.0	154.3	192.2
10-14. . . .	117.3	129.0	137.6	153.9	156.6	187.4	194.6	161.2	160.0	151.0
15-19. . . .	122.3	112.2	135.5	137.0	156.3	177.0	196.3	182.6	168.8	163.6
20-24. . . .	117.2	113.1	122.3	128.2	153.2	160.6	183.6	193.8	162.7	182.0
25-29. . . .	102.7	111.6	101.3	118.2	136.5	151.1	162.2	184.9	169.3	184.8
30-34. . . .	98.6	102.8	99.4	98.2	119.9	144.9	145.8	170.2	184.6	161.8
35-39. . . .	87.5	91.0	98.2	91.4	111.1	128.4	137.6	150.4	179.1	176.7
40-44. . . .	76.9	86.2	91.2	88.6	98.3	112.7	133.5	135.6	168.4	185.3
45-49. . . .	69.1	76.9	79.4	86.6	81.1	103.1	117.6	127.2	147.4	175.9
50-54. . . .	64.1	65.9	74.2	76.3	78.1	89.4	101.5	121.4	129.0	159.1
55-59. . . .	54.9	56.4	63.9	64.5	73.6	70.8	90.0	103.5	117.3	135.7
60-64. . . .	42.8	48.1	50.0	56.4	61.9	63.4	73.2	84.7	105.8	114.5
65-69. . . .	28.1	36.4	37.0	43.6	45.8	53.0	52.3	68.7	86.3	97.6
70-74. . . .	20.7	21.6	24.8	25.2	31.7	36.3	38.5	47.6	58.8	77.7
75-79. . . .	9.9	10.2	13.7	14.2	17.8	20.1	24.1	26.1	38.6	49.2
80-84. . . .	4.3	4.6	5.1	6.0	7.1	8.9	10.9	12.5	17.7	23.8
85 & + . . .	1.4	1.5	1.4	2.0	2.3	3.0	3.9	5.2	6.7	10.9
All ages — Tous âges.	1 272.2	1 357.3	1 451.5	1 506.9	1 688.3	1 907.6	2 008.9	2 108.0	2 205.1	2 443.1
	Percentages — Pourcentages									
0- 4. . . .	10.85	10.95	11.52	10.73	11.18	10.51	8.09	7.61	6.82	8.24
5- 9. . . .	9.15	10.41	10.28	10.28	9.96	10.32	9.00	8.16	7.00	7.87
10-14. . . .	9.22	9.51	9.48	10.21	9.28	9.82	9.69	7.65	7.26	6.18
15-19. . . .	9.61	8.27	9.33	9.09	9.26	9.28	9.77	8.66	7.66	6.70
20-24. . . .	9.21	8.33	8.42	8.51	9.08	8.42	9.14	9.19	7.38	7.45
25-29. . . .	8.07	8.22	6.98	7.84	8.09	7.92	8.07	8.77	7.68	7.56
30-34. . . .	7.75	7.58	6.85	6.52	7.10	7.59	7.26	8.07	8.37	6.62
35-39. . . .	6.88	6.71	6.76	6.07	6.58	6.73	6.85	7.13	8.12	7.23
40-44. . . .	6.05	6.35	6.28	5.88	5.82	5.91	6.65	6.43	7.64	7.58
45-49. . . .	5.43	5.67	5.47	5.75	4.80	5.40	5.85	6.03	6.68	7.20
50-54. . . .	5.04	4.86	5.11	5.06	4.63	4.69	5.05	5.76	5.85	6.51
55-59. . . .	4.32	4.16	4.40	4.28	4.36	3.71	4.48	4.91	5.32	5.55
60-64. . . .	3.36	3.54	3.44	3.74	3.67	3.32	3.64	4.02	4.80	4.69
65-69. . . .	2.21	2.68	2.55	2.89	2.71	2.78	2.60	3.26	3.91	3.99
70-74. . . .	1.63	1.59	1.71	1.67	1.88	1.90	1.92	2.26	2.67	3.18
75-79. . . .	0.78	0.75	0.94	0.94	1.05	1.05	1.20	1.24	1.75	2.01
80-84. . . .	0.34	0.34	0.35	0.40	0.42	0.47	0.54	0.59	0.80	0.97
85 & + . . .	0.11	0.11	0.10	0.13	0.14	0.16	0.19	0.25	0.30	0.45
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	29.22	30.87	31.28	31.22	30.42	30.65	26.78	23.42	21.08	22.29
15-44. . . .	47.57	45.46	44.62	43.91	45.93	45.84	47.74	48.25	46.85	43.14
45-64. . . .	18.15	18.23	18.42	18.83	17.46	17.12	19.02	20.72	22.65	23.95
65 & + . . .	5.07	5.47	5.65	6.03	6.20	6.36	6.45	7.60	9.43	10.60
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

24. SWITZERLAND (*concluded*)

Tableau III (*suite*)

24. SUISSE (*fin*)

Age (in years) (en années)	Both sexes — Les deux sexes									
	1860	1870	1880	1888	1900	1910	1920	1920	1941	1950
	Numbers in 000's — Nombres en milliers									
0- 4. . . .	275.1	296.2	334.5	324.1	378.2	403.7	328.9	325.2	305.5	412.1
5- 9. . . .	231.6	282.0	299.2	309.9	336.8	394.4	364.1	347.7	313.9	392.0
10-14. . . .	234.2	257.3	274.5	307.4	313.4	375.1	390.3	325.6	324.3	306.5
15-19. . . .	243.7	222.5	269.8	272.6	315.5	356.5	386.9	363.1	340.4	327.8
20-24. . . .	228.2	214.3	236.3	246.2	300.8	315.5	348.6	375.9	325.9	349.8
25-29. . . .	200.0	213.7	199.1	227.7	273.7	303.8	304.8	354.6	334,9	357.7
30-34. . . .	192.5	197.7	193.9	190.0	238.1	290.0	276.8	322.2	359.3	319.0
35-39. . . .	172.0	177.1	192.2	177.2	218.5	257.1	267.0	284.2	345.1	345.4
40-44. . . .	150.4	167.8	176.8	169.8	190.8	222.1	259.2	257.6	318.2	359.0
45-49. . . .	135.8	149.6	154.3	165.7	156.7	200.2	229.4	245.2	276.5	336.0
50-54. . . .	124.5	127.0	142.2	144.5	147.1	169.7	194.5	231.9	241.3	297.5
55-59. . . .	107.4	109.7	121.7	122.2	138.2	132.4	169.0	196.8	220.2	250.1
60-64. . . .	83.6	92.4	94.1	105.5	114.3	115.0	133.7	156.7	195.2	208.8
65-69. . . .	55.4	70.9	70.8	81.5	84.7	95.6	93.7	123.6	156.5	176.8
70-74. . . .	40.6	43.0	47.4	47.3	58.6	65.1	66.9	82.9	103.7	136.6
75-79. . . .	20.2	20.6	26.5	26.8	33.0	36.0	41.5	44.5	65.5	84.2
80-84. . . .	8.8	9.4	9.8	11.2	12.9	15.7	18.3	20.5	29.0	39.1
85& + . . .	2.9	3.1	2.8	3.7	4.1	5.3	6.4	8.2	10.4	16.6
All ages — Tous âges.	2 506.9	2 654.3	2 845.9	2 933.3	3 315.4	3 753.2	3 880.0	4 066.4	4 265.9	4 715.0
	Percentages — Pourcentages									
0- 4. . . .	10.97	11.15	11.75	11.05	11.41	10.76	8.48	8.00	7.16	8.75
5- 9. . . .	9.24	10.63	10.51	10.57	10.16	10.51	9.38	8.55	7.36	8.31
10-14. . . .	9.34	9.69	9.65	10.48	9.46	10.00	10.06	8.01	7.60	6.50
15-19. . . .	9.72	8.38	9.48	9.29	9.52	9.50	9.97	8.93	7.98	6.95
20-24. . . .	9.10	8.07	8.30	8.39	9.08	8.41	8.98	9.24	7.64	7.42
25-29. . . .	7.98	8.05	7.00	7.76	8.26	8.10	7.85	8.72	7.85	7.59
30-34. . . .	7.68	7.45	6.81	6.48	7.18	7.73	7.13	7.92	8.42	6.77
35-39. . . .	6.86	6.67	6.75	6.04	6.59	6.85	6.88	6.99	8.09	7.33
40-44. . . .	6.00	6.32	6.21	5.79	5.76	5.92	6.68	6.33	7.46	7.61
45-49. . . .	5.42	5.64	5.42	5.65	4.73	5.34	5.91	6.03	6.48	7.13
50-54. . . .	4.97	4.79	5.00	4.93	4.44	4.52	5.01	5.70	5.66	6.31
55-59. . . .	4.28	4.13	4.28	4.17	4.17	3.53	4.36	4.84	5.16	5.30
60-64. . . .	3.33	3.48	3.31	3.60	3.45	3.06	3.45	3.85	4.58	4.43
65-69. . . .	2.21	2.67	2.49	2.78	2.56	2.55	2.41	3.04	3.67	3.75
70-74. . . .	1.62	1.62	1.67	1.61	1.77	1.73	1.72	2.04	2.43	2.90
75-79. . . .	0.81	0.78	0.93	0.91	1.00	0.96	1.07	1.09	1.54	1.79
80-84. . . .	0.35	0.35	0.34	0.38	0.39	0.42	0.47	0.50	0.68	0.83
85& + . . .	0.12	0.12	0.10	0.13	0.12	0.14	0.16	0.20	0.24	0.35
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé									
0-14. . . .	29.55	31.47	31.91	32.10	31.03	31.27	27.92	24.56	22.12	23.55
15-44. . . .	47.34	44.94	44.55	43.75	46.39	46.51	47.49	48.13	47.44	43.67
45-64. . . .	18.00	18.04	18.01	18.35	16.79	16.45	18.73	20.42	21.88	23.17
65& + . . .	5.11	5.54	5.53	5.81	5.84	5.80	5.83	6.87	8.56	9.62
All ages — Tous âges.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1860, 1870, 1880, 1888 : J. Bertillon, *Statistique internationale...*
1900, 1910 : *Annuaire international de statistique...*
1920, 1930 : *Le mouvement naturel...*
1941, 1950 : *Demographic Yearbook. — Annuaire démographique.*

Table III (*continued*) **Tableau III** (*suite*)

25. AUSTRALIA 25. AUSTRALIE

Age (in years) (en années)	Male — Masculin				
	1901	1911	1921	1933	1947
	Numbers in 000's — Nombres en milliers				
0- 4	219.9	267.5	305.5	290.5	388.3
5- 9	230.9	229.6	301.6	318.9	307.7
10-14	218.3	215.8	268.0	317.5	271.8
15-19	189.5	226.8	234.0	311.8	294.9
20-24	174.4	228.2	219.8	298.0	306.8
25-29	162.2	199.9	224.2	277.5	294.9
30-34	156.1	171.1	226.9	251.5	294.9
35-39	151.8	151.9	196.4	228.7	282.8
40-44	125.8	144.9	169.6	229.8	255.7
45-49	88.5	133.1	144.2	209.3	234.3
50-54	67.2	108.1	135.6	171.7	205.7
55-59	52.6	72.1	115.9	132.3	197.2
60-64	84.5	51.4	90.3	114.9	157.8
65-69		40.2	55.9	92.9	115.5
70-74	38.5	29.1	33.2	66.0	76.2
75-79		18.8	19.5	35.9	50.5
80-84	8.2	8.8	9.5	13.9	26.0
85 & +		3.3	4.6	6.0	11.6
All ages — Tous âges	1 968.4	2 300.6	2 754.7	3 367.1	3 772.6
	Percentages — Pourcentages				
0- 4	11.17	11.63	11.09	8.63	10.29
5- 9	11.73	9.98	10.95	9.47	8.16
10-14	11.09	9.38	9.73	9.43	7.20
15-19	9.63	9.86	8.49	9.26	7.81
20-24	8.86	9.92	7.98	8.85	8.13
25-29	8.24	8.69	8.14	8.24	7.82
30-34	7.93	7.44	8.24	7.47	7.82
35-39	7.71	6.60	7.13	6.79	7.50
40-44	6.39	6.30	6.16	6.82	6.78
45-49	4.50	5.79	5.23	6.22	6.21
50-54	3.41	4.70	4.92	5.10	5.45
55-59	2.67	3.13	4.21	3.93	5.23
60-64	4.29	2.23	3.28	3.41	4.18
65-69		1.75	2.03	2.76	3.06
70-74	1.96	1.26	1.20	1.96	2.02
75-79		0.82	0.71	1.07	1.34
80-84	0.42	0.38	0.34	0.41	0.69
85 & +		0.14	0.17	0.18	0.31
All ages — Tous âges	100.0	100.0	100.0	100.0	10.0
	Summary — Résumé				
0-14	33.99	30.99	31.77	27.53	25.65
15-44	48.76	48.81	46.14	47.43	45.86
45-64	...	15.85	17.64	18.66	21.07
65 & +	...	4.53	4.45	6.38	7.22
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

25. AUSTRALIA (*continued*)

Tableau III (*suite*)

25. AUSTRALIE (*suite*)

Age (in years) (en années)	Female — Féminin				
	1901	1911	1921	1933	1947
	Numbers in 000's — Nombres en milliers				
0- 4	214.6	258.3	294.7	278.5	372.1
5- 9	225.7	223.7	294.2	308.4	296.3
10-14	214.7	212.4	261.0	307.7	262.9
15-19	188.3	221.7	228.5	303.6	286.7
20-24	176.6	218.1	232.5	286.6	305.9
25-29	156.6	188.5	236.2	256.5	298.4
30-34	136.0	159.8	220.7	237.7	298.0
35-39	120.4	139.6	189.3	237.5	273.3
40-44	95.1	124.7	160.7	226.5	236.3
45-49	65.7	108.5	135.2	199.4	227.4
50-54	52.6	84.8	119.5	162.8	215.6
55-59	43.1	56.9	99.2	128.9	196.9
60-64	67.5	44.0	78.4	113.7	163.2
65-69		36.5	48.7	90.5	125.8
70-74	28.1	26.0	31.7	64.3	89.7
75-79		16.5	20.3	36.3	60.6
80-84	7.1	7.7	10.3	15.7	32.4
85 & +		3.5	5.5	8.2	16.6
All ages — Tous âges	1 792.1	2 131.2	2 666.6	3 262.8	3 758.1
	Percentages — Pourcentages				
0- 4	11.97	12.12	11.05	8.54	9.90
5- 9	12.59	10.50	11.03	9.45	7.88
10-14	11.98	9.97	9.79	9.43	7.00
15-19	10.51	10.40	8.57	9.31	7.63
20-24	9.85	10.23	8.72	8.78	8.14
25-29	8.74	8.85	8.86	7.86	7.94
30-34	7.59	7.50	8.28	7.29	7.93
35-39	6.72	6.55	7.10	7.28	7.27
40-44	5.30	5.85	6.02	6.94	6.29
45-49	3.67	5.09	5.07	6.11	6.05
50-54	2.94	3.98	4.48	4.99	5.74
55-59	2.40	2.67	3.72	3.95	5.24
60-64	3.77	2.07	2.94	3.49	4.34
65-69		1.71	1.82	2.77	3.35
70-74	1.57	1.22	1.19	1.97	2.39
75-79		0.77	0.76	1.11	1.61
80-84	0.40	0.36	0.39	0.48	0.86
85 & +		0.16	0.21	0.25	0.44
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	36.54	32.59	31.87	27.42	24.78
15-44	48.71	49.38	47.55	47.46	45.20
45-64	...	13.81	16.21	18.54	21.37
65 & +	...	4.22	4.37	6.58	8.65
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Table III (*continued*)

25 AUSTRALIA (*concluded*)

Tableau III (*suite*)

25 AUSTRALIE (*fin*)

Age (in years) (en années)	*Both sexes — Les deux sexes*				
	1901	*1911*	*1921*	*1933*	*1947*
	Numbers in 000's — Nombres en milliers				
0- 4	434.5	525.8	600.2	569.3	760.4
5- 9	456.7	453.2	595.8	627.4	604.0
10-14	433.0	428.2	529.0	625.2	534.7
15-19	377.8	448.5	462.5	615.4	581.6
20-24	351.0	446.3	452.3	584.6	612.6
25-29	318.9	388.4	460.4	534.0	593.2
30-34	292.1	331.0	447.6	489.2	592.9
35-39	272.3	291.4	385.7	466.2	556.1
40-44	221.0	269.5	330.3	456.3	492.0
45-49	154.3	241.6	279.4	408.7	461.7
50-54	119.7	192.9	255.1	334.5	421.3
55-59	95.7	129.0	215.1	261.2	394.0
60-64	152.0	95.4	168.7	228.6	320.9
65-69		76.7	104.6	183.4	241.3
70-74	66.6	55.1	64.9	130.3	166.0
75-79		35.3	39.8	72.2	111.0
80-84	15.3	16.5	19.8	29.6	58.4
85 & +		6.8	10.1	14.2	28.2
All ages — Tous âges	3 760.9	4 431.6	5 421.3	6 630.3	7 530.3
	Percentages — Pourcentages				
0- 4	11.55	11.87	11.07	8.59	10.10
5- 9	12.14	10.23	10.99	9.46	8.02
10-14	11.51	9.66	9.76	9.43	7.10
15-19	10.05	10.12	8.53	9.28	7.72
20-24	9.33	10.07	8.34	8.82	8.14
25-29	8.48	8.77	8.49	8.05	7.88
30-34	7.77	7.47	8.26	7.38	7.87
35-39	7.24	6.58	7.11	7.03	7.39
40-44	5.88	6.08	6.09	6.88	6.53
45-49	4.10	5.45	5.15	6.16	6.13
50-54	3.18	4.35	4.71	5.04	5.59
55-59	2.55	2.91	3.97	3.94	5.23
60-64	4.04	2.15	3.11	3.45	4.26
65-69		1.73	1.93	2.77	3.21
70-74	1.77	1.24	1.20	1.97	2.21
75-79		0.80	0.73	1.09	1.47
80-84	0.41	0.37	0.37	0.45	0.78
85 & +		0.15	0.19	0.21	0.37
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé				
0-14	35.20	31.76	31.82	27.48	25.22
15-44	48.75	49.09	46.82	47.44	45.53
45-64	...	14.86	16.94	18.59	21.21
65 & +	...	4.29	4.42	6.49	8.04
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0

Source : 1901, 1911 : *Annuaire international de statistique...*
1921 : *Le mouvement naturel...*
1933, 1947 : *Demographic Yearbork. — Annuaire démographique.*

Table III (*concluded*)

26. NEW ZEALAND

Tableau III (*fin*)

26. NOUVELLE-ZÉLANDE

Age (in years) (en années)	*Male — Masculin*						
	1891	*1901*	*1911*	*1921*	*1936*	*1945*	*1951*
	Numbers in 000's — Nombres en milliers						
0- 4	42.3	44.3	60.0	65.8	59.8	82.6	108.6
5- 9	43.5	43.3	53.8	67.2	65.6	67.0	84.3
10-14	40.8	43.1	46.4	61.6	69.1	60.8	70.4
15-19	32.6	42.5	44.8	54.5	67.4	64.6	60.7
20-24	48.3	41.2	49.7	48.0	67.7	46.5	66.5
25-29	45.7	65.0	104.1	91.6	119.8	51.6	70.0
30-34						58.1	64.1
35-39	38.3	45.9	70.7	95.9	94.2	58.5	66.2
40-44						53.3	62.6
45-49	33.8	34.5	44.5	67.6	92.0	47.4	55.4
50-54						40.5	46.8
55-59	18.6	26.5	29.5	38.2	70.8	41.6	38.2
60-64						39.0	37.2
65-69	6.4	15.5	19.6	22.0	35.0	31.8	33.5
70-74						19.9	25.6
75-79	1.9	3.7	7.9	10.3	14.0	11.5	14.4
80-84						4.9	6.8
85 & +						2.3	2.8
All ages — Tous âges	332.2	405.5	531.0	622.7	755.4	781.9	914.1
	Percentages — Pourcentages						
0- 4	12.73	10.92	11.30	10.57	7.92	10.56	11.88
5- 9	13.09	10.68	10.13	10.79	8.68	8.57	9.22
10-14	12.28	10.63	8.74	9.89	9.15	7.78	7.70
15-19	9.81	10.48	8.44	8.75	8.92	8.26	6.64
20-24	8.52	10.16	9.36	7.71	8.96	5.95	7.28
25-29	13.76	16.03	19.60	14.71	15.86	6.60	7.66
30-34						7.43	7.01
35-39	11.53	11.32	13.31	15.40	12.47	7.48	7.24
40-44						6.82	6.85
45-49	10.17	8.51	8.38	10.86	12.18	6.06	6.06
50-54						5.18	5.12
55-59	5.60	6.53	5.56	6.13	9.37	5.32	4.18
60-64						4.99	4.07
65-69	1.93	3.82	3.69	3.53	4.63	4.07	3.66
70-74						2.55	2.80
75-79	0.60	0.91	1.49	1.65	1.85	1.47	1.58
80-84						0.63	0.74
85 & +						0.29	0.31
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé						
0-14	38.10	32.33	30.17	31.25	25.75	26.91	28.80
15-44	43.62	47.99	50.71	46.57	46.21	42.54	42.68
45-64	15.77	15.04	13.94	16.99	21.55	21.55	19.43
65 & +	2.53	4.73	5.18	5.18	6.48	9.01	9.09
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III *(concluded)*

26. NEW ZEALAND *(continued)*

Tableau III *(fin)*

26. NOUVELLE-ZÉLANDE *(suite)*

Age (in years) (en années)	*Female — Féminin*						
	1891	*1901*	*1911*	*1921*	*1936*	*1945*	*1951*
	Numbers in 000's — Nombres en milliers						
0- 4	40.9	42.5	57.9	63.4	56.9	79.5	104.5
5- 9	42.6	42.4	52.2	64.7	62.8	65.3	80.8
10-14	40.3	42.2	45.0	59.8	66.2	57.9	68.4
15-19	32.7	42.4	43.7	52.9	64.9	63.3	57.6
20-24	29.8	42.0	46.1	49.2	65.9	66.4	63.8
25-29	40.3	60.5	90.2	96.9	114.7	64.7	68.1
30-34						64.4	66.0
35-39	28.5	38.6	60.7	89.5	98.7	59.9	66.1
40-44						52.1	60.2
45-49	21.8	26.0	37.3	58.3	90.2	48.6	52.3
50-54						44.1	47.5
55-59	10.6	18.0	22.8	33.3	65.5	41.9	42.0
60-64						38.5	39.6
65-69	4.4	9.3	14.7	18.5	34.7	32.3	35.7
70-74						20.3	27.6
75-79	1.6	2.9	5.4	8.7	14.0	12.6	16.1
80-84						5.8	8.2
85 & +						2.9	3.9
All ages — Tous âges	293.5	366.8	476.0	595.2	734.5	820.5	908.4
	Percentages — Pourcentages						
0- 4	13.93	11.59	12.16	10.65	7.74	9.69	11.51
5- 9	14.51	11.56	10.97	10.87	8.54	7.96	8.90
10-14	13.73	11.50	9.45	10.05	9.00	7.06	7.53
15-19	11.14	11.56	9.18	8.89	8.83	7.72	6.34
20-24	10.15	11.45	9.68	8.27	8.96	8.09	7.02
25-29	13.73	16.49	18.95	16.28	15.60	7.89	7.50
30-34						7.85	7.26
35-39	9.71	10.52	12.75	15.04	13.42	7.30	7.28
40-44						6.35	6.63
45-49	7.43	7.09	7.84	9.79	12.27	5.92	5.76
50-54						5.37	5.23
55-59	3.61	4.91	4.79	5.59	8.91	5.11	4.62
60-64						4.69	4.36
65-69	1.50	2.54	3.09	3.11	4.72	3.94	3.93
70-74						2.47	3.04
75-79	0.55	0.79	1.13	1.46	1.90	1.54	1.77
80-84						0.71	0.90
85 & +						0.35	0.43
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé						
0-14	42.17	34.65	32.58	31.57	25.28	24.71	27.94
15-44	44.73	50.02	50.56	48.48	46.81	45.20	42.03
45-64	11.04	12.00	12.63	15.38	21.18	21.09	19.97
65 & +	2.05	3.33	4.22	4.57	6.62	9.01	10.07
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III *(concluded)*

26. NEW ZEALAND *(concluded)*

Tableau III *(fin)*

26. NOUVELLE-ZÉLANDE *(fin)*

Age (In years) (en années)	Both Sexes — Les deux sexes						
	1891	1901	1911	1921	1936	1945	1951
	Numbers in 000's — Nombres en milliers						
0- 4	83.2	86.8	117.9	129.2	116.7	162.1	213.1
5- 9	86.1	85.7	106.0	131.9	128.4	132.3	165.1
10-14	81.1	85.3	91.4	121.4	135.3	118.8	138.8
15-19	65.3	84.9	88.5	107.4	132.3	127.9	118.3
20-24	58.1	83.2	95.8	97.2	133.6	113.0	130.3
25-29	86.0	125.5	194.3	188.5	234.5	116.3	138.1
30-34						122.4	130.1
35-39	66.8	84.5	131.4	185.4	192.9	118.4	132.3
40-44						105.4	122.8
45-49	55.6	60.5	81.8	125.9	182.2	96.0	107.8
50-54						84.6	94.2
55-59	29.2	44.5	52.3	71.5	136.3	83.5	80.2
60-64						77.4	76.8
65-69	10.8	24.8	34.3	40.5	69.7	64.2	69.2
70-74						40.2	53.1
75-79	3.5	6.6	13.3	19.0	28.0	24.2	30.5
80-84						10.7	15.0
85 & +						5.1	6.7
All ages — Tous âges	625.7	772.3	1 007.0	1 217.9	1 489.9	1 602.5	1 822.4
	Percentages — Pourcentages						
0- 4	13.30	11.24	11.71	10.61	7.83	10.12	11.69
5- 9	13.76	11.10	10.53	10.83	8.62	8.26	9.06
10-14	12.96	11.04	9.08	9.97	9.08	7.41	7.62
15-19	10.43	10.99	8.79	8.82	8.88	7.98	6.49
20-24	9.28	10.77	9.51	7.98	8.97	7.05	7.15
25-29	13.74	16.25	19.29	15.48	15.74	7.26	7.58
30-34						7.64	7.14
35-39	10.67	10.94	13.05	15.22	12.95	7.39	7.26
40-44						6.58	6.74
45-49	8.88	7.83	8.12	10.34	12.23	5.99	5.91
50-54						5.28	5.17
55-59	4.67	5.76	5.19	5.87	9.15	5.21	4.40
60-64						4.83	4.21
65-69	1.73	3.21	3.41	3.33	4.68	4.01	3.80
70-74						2.51	2.91
75-79	0.56	0.85	1.32	1.56	1.88	1.51	1.67
80-84						0.67	0.82
85 & +						0.32	0.37
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Summary — Résumé						
0-14	40.02	33.38	31.32	31.41	25.53	25.79	28.37
15-44	44.12	48.95	50.64	47.50	46.54	43.90	42.36
45-64	13.55	13.59	13.31	16.21	21.38	21.31	19.69
65 & +	2.96	4.06	4.73	4.89	6.56	9.02	9.57
All ages — Tous âges	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources : 1891-1936 : Census volumes. — Volumes du recensement.
1945, 1951 : *Demographic Yearbooks. — Annuaires démographiques.*

ANNEX
ANNEXE

Table I. — Distributions of selected populations by age groups at the most recent date (numbers in thousands)

Tableau I. — Population par groupes d'âges pour quelques pays, à la date la plus récente connue (chiffres en milliers)

Country	Date	Source [a]	Age in years / Age en années: 0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 & +	All ages [b] / Tous âges [b]	Pays
AFRICA																		**AFRIQUE**
Algeria (Moslems) [1]	1948	C	1 111.6	1 099.0	1 038.8	765.2	582.2	519.6	471.7	446.8	388.2	343.1	247.7	180.4	180.4	203.9	7 554.0	Algérie (Musulmans) [1]
Angola	1940	C	564.6	534.9	407.2	295.8	304.3	351.8	285.7	282.8	223.7	146.9	93.1	60.8	67.6	109.1	3 728.3	Angola
Basutoland (Africans)	1946	C	63.6	71.8	75.6	75.3	29.3	41.8	35.2	27.7	27.5	27.8	17.9	18.2	11.2	34.8	557.7	Bassoutoland (Africains)
Egypt [2]	1947	C	2 584.8	2 400.0	2 213.5	1 901.4	1 383.8	1 472.3	1 309.6	1 313.0	1 135.4	843.7	869.7	344.2	550.8	586.2	18 908.4	Égypte [2]
Gold Coast (U. K.)	1950	E	590.7	822.7		717.3		658.0		545.1		323.9		152.8		58.7	3 869.2	Côte-de-l'Or (R.-U.)
Mozambique	1940	E	1 062.2	773.5	374.9	339.9	380.7	574.2	363.5	457.6	198.6	187.0	73.4	121.4	64.7	113.7	5 085.3	Mozambique
Togoland (U. K.)	1950	E	57.4	83.5		75.4		70.5		58.6		31.7		14.5		5.8	397.4	Togo (R.-U.)
Tunisia (Moslems)	1946	C	406.2	418.3	356.3	253.8	225.9	222.0	192.9	159.6	134.3	199.6	92.3	62.2	189.5		2 832.9	Tunisie (Musulmans)
Tunisia (Europeans)	1946	C	24.4	22.6	23.1	22.6	20.1	16.2	18.2	18.2	16.7	13.9	11.6	9.7	22.2		239.5	Tunisie (Européens)
Union of South Africa :	1946	C																Union Sud-Africaine :
Europeans			268.6	241.4	212.9	211.9	196.8	187.9	187.6	181.6	145.0	116.5	108.0	91.2	75.4	146.5	2 371.3	Européens
Non-Europeans			1 246.6	1 216.0	1 100.2	934.3	775.1	770.9	643.0	544.9	458.7	371.7	267.6	174.3	182.8	328.6	9 014.7	Non-Européens
NORTH AMERICA																		**AMÉRIQUE DU NORD**
Alaska	1950	C	15.6	18.5		28.0		26.5		18.5		10.7		6.2		4.7	128.7	Alaska
Canada	1951	C	1 722.1	1 397.8	1 130.8	1 058.0	1 088.6	1 131.2	1 042.7	999.1	868.6	744.7	662.7	570.7	506.2	1 086.3	14 009.5	Canada
Costa Rica	1950	C	132.6	112.2	98.3	84.2	77.0	59.1	47.6	46.8	36.4	28.1	24.2	15.7	14.9	23.1	800.2	Costa-Rica
Cuba	1943	C	628.5	574.6	536.4	455.8	484.0	410.6	353.9	339.1	235.5	166.2	185.0	142.5	106.6	159.7	4 778.4	Cuba
Dominican Republic	1950	C	375.9	297.8	276.8	225.7	214.4	156.8	119.6	115.6	90.8	67.2	59.6	35.9	38.5	61.1	2 135.7	République Dominicaine
El Salvador	1950	C	289.1	250.2	224.2	198.8	177.1	140.3	112.4	111.9	89.5	69.2	63.2	36.0	37.8	54.9	1 854.6	Salvador
Greenland (actual number)	1945	C	3 561	2 856	2 700	2 471	1 743	1 554	1 410	1 203	1 042	849	685	477	350	464	21 365	Groenland (nombre réel)
Guatemala [3]	1950	E	436.2	412.7	365.8	290.6	235.0	209.2	174.6	160.6	132.9	104.1	132.5		57.4	72.6	2 784.2	Guatemala [3]
Haiti	1950	C	374.9	400.5	397.7	308.0	267.4	277.2	189.1	229.6	157.7	133.5	99.4	56.8	71.0	123.3	3 086.1	Haïti
Honduras	1950	C	237.2	195.6	178.4	152.5	136.8	111.3	91.6	85.2	71.1	59.1	52.3	39.2	35.4	59.8	1 505.5	Honduras
Jamaica [4]	1949	E	182.8	163.7	147.9	143.0	114.1	111.0	104.1	93.9	77.3	70.3	47.2	38.3	26.8	53.8	1 374.2	Jamaïque [4]
Mexico	1950	C	3 970.0	3 674.6	3 109.9	2 632.2	2 299.3	2 019.6	1 432.2	1 546.8	1 209.7	1 073.5	828.1	528.1	554.1	865.6	25 743.7	Mexique
Nicaragua	1950	C	168.9	154.5	134.0	110.5	99.4	83.5	60.1	62.1	44.7	37.4	32.5	18.9	20.3	30.1	1 056.9	Nicaragua
Puerto Rico [5]	1950	C	362.0	323.0	269.0	210.0	192.0	161.0	131.0	222.0		160.0		98.0		84.0	2 212.0	Porto-Rico [5]
Trinidad and Tobago	1950	E	103.8	82.9	63.6	52.3	51.6	50.2	45.7	41.6	35.1	29.4	22.0	16.2	12.1	26.0	632.5	Trinité et Tobago
USA [6]	1950	C	16 324.0	13 241.0	11 361.0	10 732.0	11 327.0	12 093.0	11 601.0	11 193.0	10 058.0	8 990.0	8 274.0	7 230.0	5 950.0	12 322.0	150 696.0	États-Unis [6]
SOUTH AMERICA																		**AMÉRIQUE DU SUD**
Argentina	1947	C	1 781.4	1 577.7	1 525.3	1 569.8	1 489 9	1 286.2	1 22.73	1 158.8	1 026.6	870.6	698.4	578.1	418.4	620.2	15 828.7	Argentine
Bolivia	1947	E	709.2	570.4	497.2	447.0	358.4	524.2		335.4		215.8			196.5		3 854.1	Bolivie
Brazil	1950	C	8 370.9	7 015.5	6 308.6	5 502.3	4 991.1	4 132.3	3 245.0	3 041.0	2 388.7	1 976.7	1 584.7	1 065.6	936.2	1 269.2	51 827.8	Brésil
British Guiana	1946	C	51.9	46.6	40.8	36.4	32.2	26.5	26.3	22.4	21.0	17.8	12.7	11.1	8.8	14.7	369.3	Guyane britannique
Chile	1948	E	696.0	710.4	681.8	573.8	511.3	477.7	394.3	359.2	300.6	241.6	194.7	150.6	132.2	196.8	5 621.0	Chili
Colombia	1950	C	1 730.6	1 612.4	1 382.7	1.155.2	1 061.8	895.2	685.7	686.9	522.5	391.8	360.3	202.7	239.8	326.5	11 254.1	Colombie
Ecuador	1950	C	533.2	455.0	371.4	317.5	288.7	244.8	189.5	185.7	141.1	114.6	109.3	68.0	69.5	113.5	3 201.8	Équateur
Panama [7]	1950	C	122.4	106.7	85.2	72.5	66.6	60.4	51.3	47.2	33.4	27.7	23.8	16.7	17.0	24.4	755.3	Panama [7]
Peru [8]	1949	E	1 149.3	1 104.0	870.9	703.8	635.5	575.4	461.1	445.5	331.9	289.6	214.6	166.3	155.9	320.7	7 424.5	Pérou [8]
Venezuela [9]	1950	C	847.8	687.3	574.7	496.6	473.7	400.6	327.6	301.5	239.6	184.8	164.7	101.9	92.5	133.5	5 026.8	Venezuela [9]
Paraguay	1950	C	217.6	196.2	167.5	128.7	122.5	99.0	76.9	70.6	53.1	45.0	38.8	31.5	31.3	49.4	1 328.1	Paraguay
ASIA																		**ASIE**
Burma	1954	E	2 562.5	2 286.6	2 108.9	1 793.5	1 804.7	1 639.3	1 464.4	1 111.8	975.8	747.2	654.9	503.4	418.2	526.1	18 597.3	Birmanie
Ceylon	1947	E	886.9	837.0	832.0	705.7	662.5	595.1	463.8	484.9	333.0	332.2	202.0	169.4	134.8	239.6	6 878.9	Ceylan
Formosa (Taiwan)	1950	C	1 236.7	959.9	932.5	824.7	713.3	604.0	490.0	443.9	359.8	286.9	221.9	164.4	127.8	188.8	7 554.6	Formose (Taïwan)
India	1951	C	47 647.5	45 513.0	40 460.3	35 876.0	32 036.3	28 938.9	25 823.3	22 388.5	19 045.5	15 955.2	12 897.0	10 026.8	7 403.8	12 786.6	356 798.7	Inde
Iraq	1947	C	839.1	736.7	733.4		486.7		552.3		484.5		292.8		438.5		4 564.0	Irak
Israel [10]	1951	E	179.2	121.3	103.1	111.7	111.2	116.9	95.3	107.9	105.4	79.0	64.8	41.1	34.1	52.9	1 323.9	Israël [10]
Japan [11]	1950	C	11 202.0	9 541.0	8 715.0	8 549.0	7 714.0	6 165.0	5 188.0	5 051.0	4 484.0	4 000.0	3 396.0	2 743.0	2 304.0	4 113.0	83 165.0	Japon [11]
Jordan	1950	E	84.5	102.0	80.4	50.9	74.9		62.9		59.9		35.3		53.2		600.0	Jordanie
South Korea	1952	C	2 539.7	2 816.2	2 617.9	2 192.9	1 267.2	1 210.4	1 220.7	1 449.9	1 012.5	867.3	682.3	602.8	513.4	717.4	19 410.6	Corée du Sud
Malaya (incl. Singapore) [12]	1947	C	314.4	332.6	262.3	198.0	189.2	187.6	152.4	134.4	118.6	83.7	75.6	34.7	48.0	70.6	2 202.1	Malaisie (y compris Singapour) [12]
North Borneo	1951	C	49.0	43.1	39.9	32.1	26.1	29.5	26.8	25.0	19.0	13.6	11.2	5.9	12.9		334.1	Bornéo du Nord
Philippines	1948	C	2 991.6	2 941.6	2 560.1	2 064.3	1 767.5	1 493.9	1 121.0	1 128.8	754.9	693.4	433.8	343.9	332.1	606.7	19 233.6	Philippines
Thailand	1947	C	2 644.4	2 470.9	2 259.7	1 944.6	1 547.1	1 248.8	1 146.3	1 005.8	830.8	691.2	511.4	399.2	281.2	450.7	17 432.1	Thaïlande
Turkey	1950	C	3 040.9	2 555.5	2 338.2	2 371.1	1 974.5	1 498.1	1 098.9	1 286.4	1 144.1	745.7	871.0	480.2	543.5	712.1	20 860.2	Turquie
EUROPE																		**EUROPE**
Austria [13]	1951	C	533.7	522.8	548.9	441.9	497.9	500.2	374.4	462.4	542.3	547.4	489.1	405.9	339.1	699.7	6 905.7	Autriche [13]
Belgium	1950	E	693.2	542.2	570.8	623.0	655.4	695.5	471.4	627.0	652.7	651.6	585.7	492.2	423.7	955.0	8 639.4	Belgique
Bulgaria	1945	E	658.2	601.8	669.8	719.2	716.6	455.5	555.8	545.9	457.7	399.9		1 197.1			6 977.5	Bulgarie
Czechoslovakia	1947	C	1 144.1	929.0	882.9	1 016.1	1 068.8	832.2	805.7	1 024.4	950.5	860.4	689.2	552.3	469.4	921.6	12 146.6	Tchécoslovaquie
Denmark	1950	C	417.6	394.3	315.7	292.3	296.0	316.2	311.7	314.3	307.8	277.5	251.1	214.2	182.3	390.1	4 281.1	Danemark
Finland	1950	C	502.4	376.9	328.9	311.5	327.1	308.2	267.7	287.7	289.5	246.3	207.9	166.7	140.7	266.5	4 028.0	Finlande
France	1950	E	3 935.0	2 427.0	2 747.0	3 111.0	3 295.0	3 336.0	2 157.0	2 801.0	3 094.0	3 064.0	2 749.0	2 245.0	2 036.0	4 946.0	41 943.0	France
German Federal Republic	1950	C	3 349.3	3 574.1	4 313.5	3 473.6	3 578.0	3 546.7	2 477.1	3 604.4	3 855.7	3 690.8	3 131.7	2 526.1	2 150.8	4 423.9	47 695.7	Allemagne (République fédérale)
Germany USSR Zone [14]	1946	C	1 201.0	1 702.5	1 409.0	1 290.6	1 015.9	851.6	1 033.1	1 291.4	1 378.4	1 335.5	1 159.0	1 044.2	874.0	1 727.5	17 313.7	Allemagne (zone de l'URSS) [14]
Great Britain	1951	C	4 207.1	3 550.2	3 223.6	3 076.1	3 245.9	3 635.3	3 429.9	3 691.2	3 768.5	3 542.0	3 117.2	2 689.0	2 376.5	5 288.4	48 840.9	Grande-Bretagne
Greece	1940	C	758.7	821.1	843.6	683.0	533.0	603.0	551.4	494.7	420.4	324.2	311.3	271.4	245.4	463.6	7 344.8	Grèce
Hungary	1941	C	781.5	788.5	850.4	889.7	580.7	781.4	812.2	723.0	672.2	543.7	469.6	426.1	346.4	649.7	9 315.1	Hongrie
Iceland	1950	C	18.2	14.6	11.5	12.1	12.3	11.1	10.0	9.2	8.3	7.6	6.9	6.4	4.6	10.8	143.6	Islande
Ireland	1951	C	312.9	281.0	260.9	241.2	202.2	198.4	191.6	200.9	180.3	160.9	163.0	128.8	122.1	316.4	2 960.6	Irlande
Italy	1950	E	4 283.4	3 757.5	4 152.5	4 046.6		14 101.4				10 404.5			1 804.0	3 729.5	46 279.4	Italie
Netherlands	1951	E	1 198.0	989.4	837.5	805.3	804.5	788.6	712.3	687.0	653.8	605.7	530.2	461.7	384.0	806.5	10 264.5	Pays-Bas
Norway	1950	C	319.2	267.1	213.3	204.3	229.6	261.7	263.4	250.3	233.5	216.2	199.3	167.8	136.5	316.1	3 278.3	Norvège
Poland	1949	E	2 468.0	2 056.0	2 330.0	2 449.0	2 343.0	1 982.0	1 394.0	1 903.0	1 765.0	1 513.0	1 170.0	844.0	715.0	1.228.0	24 160.0	Pologne
Portugal	1950	C	889.8	798.7	799.7	811.0	761.7	681.2	541.1	567.3	524.7	460.0	390.6	331.8	294.2	589.4	8 441.2	Portugal
Spain	1950	C	2 572.4	2 434.6	2 326.8	5 358.9		4 320.7		3 688.4		3 060.3		2 178.5		2 022.5	27 963.1	Espagne
Sweden [15]	1950	C	603.7	584.7	459.7	414.4	455.9	533.8	541.4	554.3	547.8	482.4	433.7	377.2	328.0	726.9	7 043.9	Suède [15]
Switzerland	1950	C	410.2	409.5	317.6	317.8	344.2	366.2	352.4	343.1	364.8	343.5	310.3	259.9	214.1	460.9	4 814.5	Suisse
Yugoslavia	1951	E	1 890.9	1 429.4	1 717.2	1 771.1	1 629.5	1 344.5	820.2	936.8	1 079.3	941.8	780.5	584.2	488.0	925.9	16 339.3	Yougoslavie
OCEANIA																		**OCÉANIE**
Australia [16]	1951	E	930.4	742.9	607.7	553.6	642.1	699.0	643.0	634.1	581.4	492.4	458.8	399.4	370.3	676.2	8 431.3	Australie [16]
New Zealand (excl. Maoris)	1951	C	213.1	165.1	138.8	118.3	130.3	138.1	130.1	132.2	122.8	107.8	94.2	80.2	76.8	174.5	1 822.4	Nouvelle-Zélande (non compris les Maoris)
New Zealand (Maoris)	1951	C	21.4	16.6	15.7	12.2	10.4	8.4	6.3	6.2	4.9	3.8	2.9	2.2	1.8	2.9	115.4	Nouvelle-Zélande (Maoris)

			0-8	8-14	15-19	20-29	30-39	40-49	50-59	60 & +	All ages / Tous âges	
USSR	1939	C	31 412.2	29 745.3	15 124.2	30 639.0	25 333.0	15 235.9	10 867.4	11 129.3	169 486.3	URSS

Source : United Nations Statistical Office.

[a] C = Census; E = Estimates.
[b] Excluding " age not stated ".
[1] Excluding " *population comptée à part* ".
[2] Excluding the nomad Arabs estimated at 55 000.
[3] Relative distribution of 1940 census.
[4] Excluding dependencies.
[5] Sample of census returns.
[6] Sample of census returns.
[7] Excluding about 50 000 tribal Indians.
[8] Relative distribution of 1940 census.
[9] Including Indians.
[10] Jewish population.
[11] 10 per cent sample of census returns.
[12] Malays only.
[13] 1 per cent sample of census data.
[14] Excluding Berlin.
[15] 3.3 per cent sample of census returns.
[16] Excluding Aboriginals.

Source : Bureau de statistique de l'Organisation des Nations Unies.

[a] C = recensement; E = estimation.
[b] Non compris les personnes d'âge non déclaré.
[1] « Population comptée à part » non comprise.
[2] Non compris les Arabes nomades dont le nombre est évalué à 55 000.
[3] Composition par âge évaluée sur la base du recensement de 1940.
[4] Non compris les dépendances.
[5] D'après un sondage des bulletins de recensement.
[6] D'après un sondage des bulletins de recensement.
[7] Non compris les tribus indiennes qui représentent environ 50 000 personnes.
[8] Composition par âge évaluée sur la base du recensement de 1940.
[9] Y compris les Indiens.
[10] Population juive seulement.
[11] D'après un sondage à 10 pour 100 des bulletins de recensement.
[12] Population malaise seulement.
[13] D'après un sondage à 1 pour 100 des bulletins de recensement.
[14] Non compris la ville de Berlin.
[15] D'après un sondage à 3.3 pour 100 des bulletins de recensement.
[16] Non compris les Maoris.

Table II. — Percentage distributions of selected populations by age groups at the most recent date

Tableau II. — Population par groupes d'âges pour quelques pays, pour 100 de la population totale, à la date la plus récente connue

Country	Date	Source	Age in years: 0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 & +	All ages	Pays
			Age en années:														Tous âges	
AFRICA																		**AFRIQUE**
Algeria (Moslems) [1]	1948	C	14.72	14.55	13.75	10.13	7.71	6.88	6.24	5.91	5.14	4.54	3.28	2.39	2.06	2.70	100.0	Algérie (Musulmans) [1]
Angola	1940	C	15.14	14.35	10.92	7.93	8.16	9.44	7.66	7.58	6.00	3.94	2.50	1.63	1.81	2.93	100.0	Angola
Basutoland (Africans)	1946	C	11.40	12.87	13.56	13.50	5.25	7.49	6.31	4.97	4.93	4.98	3.21	3.26	2.01	6.24	100.0	Bassoutoland (Africains)
Egypt [2]	1947	C	13.67	12.69	11.71	10.05	7.32	7.78	6.93	6.94	6.00	4.46	4.60	1.82	2.91	3.10	100.0	Égypte [2]
Gold Coast (U.K)	1950	E	15.27	21.26		18.54		17.01		14.09		8.37		3.95		1.52	100.0	Côte-de-l'Or (R.-U.)
Mozambique	1940	C	20.88	15.21	7.37	6.68	7.49	11.29	7.15	9.00	3.90	3.68	1.44	2.39	1.27	2.24	100.0	Mozambique
Togoland (U.K.)	1950	E	14.44	21.01		18.97		17.74		14.74		7.98		3.65		1.46	100.0	Togo (R.-U.)
Tunisia (Europeans)	1946	C	10.19	9.44	9.64	9.44	8.39	6.76	7.60	7.60	6.97	5.80	4.84	4.05	9.27		100.0	Tunisie (Européens)
Tunisia (Moslems)	1946	C	14.34	14.76	12.58	8.96	7.97	7.84	6.81	5.63	4.74	4.22	3.26	2.20	6.69		100.0	Tunisie (Musulmans)
Union of South Africa :	1946	C																Union Sud-Africaine
Europeans			11.33	10.18	8.98	8.94	8.30	7.92	7.91	7.66	6.12	4.91	4.56	3.85	3.18	6.18	100.0	Européens
Non-Europeans			13.83	13.49	12.20	10.36	8.60	8.55	7.13	6.04	5.09	4.12	2.97	1.93	2.03	3.64	100.0	Non-Européens
NORTH AMERICA																		**AMÉRIQUE DU NORD**
Alaska	1950	C	12.09	14.39		21.76		20.58		14.41		8.29		4.83		3.69	100.0	Alaska
Canada	1951	C	12.29	9.98	8.07	7.55	7.77	8.07	7.44	7.13	6.20	5.32	4.73	4.07	3.61	7.75	100.0	Canada
Costa Rica	1950	C	16.57	14.02	12.28	10.52	9.62	7.38	5.95	5.85	4.55	3.51	3.02	1.96	1.86	2.89	100.0	Costa-Rica
Cuba	1943	C	13.15	12.02	11.23	9.54	10.13	8.59	7.41	7.10	4.93	3.48	3.87	2.98	2.23	3.34	100.0	Cuba
Dominican Republic	1950	C	17.60	13.94	12.96	10.57	10.04	7.34	5.60	5.41	4.25	3.15	2.79	1.68	1.80	2.86	100.0	République Dominicaine
El Salvador	1950	C	15.58	13.49	12.09	10.72	9.55	7.56	6.06	6.03	4.82	3.73	3.41	1.94	2.04	2.96	100.0	Salvador
Greenland	1945	C	16.66	13.36	12.63	11.56	8.16	7.27	6.60	5.63	4.88	3.97	3.21	2.23	1.64	2.17	100.0	Groenland (nombre réel)
Guatemala [3]	1950	E	15.67	14.82	13.14	10.44	8.44	7.51	6.27	5.77	4.77	3.74	4.76		2.06	2.61	100.0	Guatemala [3]
Haiti	1950	C	12.15	12.98	12.89	9.98	8.66	8.98	6.13	7.44	5.11	4.33	3.22	1.84	2.30	4.00	100.0	Haïti
Honduras	1950	C	15.75	12.99	11.84	10.13	9.08	7.39	6.08	5.66	4.72	3.92	3.47	2.61	2.35	3.97	100.0	Honduras
Jamaica [4]	1949	E	13.30	11.91	10.76	10.41	8.30	8.08	7.58	6.83	5.62	5.12	3.44	2.79	1.95	3.92	100.0	Jamaïque [4]
Mexico	1950	C	15.42	14.28	12.08	10.22	8.93	7.85	5.56	6.01	4.70	4.17	3.22	2.05	2.15	3.36	100.0	Mexique
Nicaragua	1950	C	15.98	14.62	12.68	10.45	9.40	7.90	5.69	5.88	4.23	3.54	3.07	1.79	1.92	2.85	100.0	Nicaragua
Puerto Rico [5]	1950	C	16.36	14.60	12.16	9.49	8.68	7.28	5.92	10.04		7.23		4.43		3.80	100.0	Porto-Rico [5]
Trinidad and Tobago	1950	E	16.41	13.11	10.06	8.27	8.16	7.94	7.23	6.58	5.55	4.65	3.48	2.56	1.91	4.11	100.0	Trinité et Tobago
USA [6]	1950	C	10.83	8.78	7.54	7.12	7.52	8.02	7.70	7.42	6.68	5.96	5.49	4.80	3.95	8.18	100.0	États-Unis [6]
SOUTH AMERICA																		**AMÉRIQUE DU SUD**
Argentina	1947	C	11.25	9.97	9.63	9.92	9.41	8.12	7.75	7.32	6.49	5.50	4.41	3.65	2.64	3.92	100.0	Argentine
Bolivia	1947	E	18.40	14.80	12.90	11.60	9.30	13.60		8.70		5.60		5.10			100.0	Bolivie
Brazil	1950	C	16.15	13.54	12.17	10.62	9.63	7.97	6.26	5.87	4.61	3.81	3.06	2.06	1.81	2.45	100.0	Brésil
British Guiana	1946	C	14.06	12.62	11.04	9.84	8.72	7.17	7.13	6.07	5.69	4.83	3.44	3.01	2.39	3.99	100.0	Guyane britannique
Chile	1948	E	12.38	12.64	12.13	10.21	9.10	8.50	7.01	6.39	5.35	4.30	3.46	2.68	2.35	3.50	100.0	Chili
Colombia	1950	C	15.39	14.33	12.29	10.27	9.44	7.96	6.10	6.10	4.64	3.48	3.20	1.80	2.13	2.90	100.0	Colombie
Ecuador	1950	C	16.65	14.21	11.60	9.92	9.02	7.65	5.92	5.80	4.41	3.58	3.41	2.12	2.17	3.54	100.0	Équateur
Panama [7]	1950	C	16.21	14.13	11.28	9.60	8.82	8.00	6.79	6.25	4.42	3.67	3.15	2.21	2.25	3.23	100.0	Panama [7]
Paraguay	1950	C	16.39	14.77	12.61	9.69	9.22	7.45	5.79	5.32	4.00	3.39	2.92	2.37	2.36	3.72	100.0	Paraguay
Peru [8]	1940	E	15.48	14.87	11.73	9.48	8.56	7.75	6.21	6.00	4.47	3.90	2.89	2.24	2.10	4.32	100.0	Pérou [8]
Venezuela [9]	1950	C	16.86	13.67	11.43	9.88	9.42	7.97	6.52	6.00	4.77	3.68	3.28	2.03	1.84	2.66	100.0	Venezuela [9]
ASIA																		**ASIE**
Burma	1954	E	13.78	12.30	11.34	9.65	9.71	8.81	7.87	5.98	5.25	4.02	3.52	2.71	2.25	2.83	100.0	Birmanie
Ceylon	1947	E	12.89	12.17	12.09	10.26	9.63	8.65	6.74	7.05	4.84	4.83	2.94	2.46	1.96	3.48	100.0	Ceylan
Formosa	1950	C	16.37	12.70	12.34	10.92	9.44	7.99	6.48	5.88	4.76	3.80	2.94	2.18	1.69	2.50	100.0	Formose (Taïwan)
India	1951	C	13.35	12.76	11.34	10.06	8.98	8.11	7.24	6.28	5.34	4.47	3.62	2.81	2.08	3.58	100.0	Inde
Iraq	1947	C	18.38	16.14	16.07		10.66		12.10		10.62		6.42		9.61		100.0	Irak
Israel [10]	1951	E	13.53	9.16	7.79	8.44	8.40	8.83	7.20	8.15	7.96	5.97	4.89	3.10	2.58	4.00	100.0	Israël [10]
Japan [11]	1950	C	13.47	11.47	10.48	10.28	9.28	7.41	6.24	6.07	5.39	4.81	4.08	3.30	2.77	4.94	100.0	Japon [11]
Jordan	1950	E	14.08	17.00	13.40	8.48	12.48		10.48		9.32		5.88		8.87		100.0	Jordanie
South Korea	1952	C	13.09	14.51	13.49	11.30	6.53	6.23	6.29	5.92	5.22	4.47	3.52	3.11	2.65	3.70	100.0	Corée du Sud
Malaya [12]	1947	C	14.28	15.10	11.91	8.99	8.59	8.52	6.92	6.10	5.38	3.80	3.43	1.58	2.18	3.21	100.0	Malaisie (y compris Singapour) [12]
North Borneo	1951	C	14.66	12.89	11.95	9.61	7.80	8.83	8.03	7.49	5.69	4.08	3.35	1.77	3.86		100.0	Bornéo du Nord
Philippines	1948	C	15.56	15.30	13.31	10.73	9.19	7.77	5.83	5.87	3.92	3.60	2.26	1.79	1.73	3.15	100.0	Philippines
Thailand	1947	C	15.17	14.18	12.97	11.16	8.88	7.16	6.57	5.77	4.77	3.96	2.93	2.29	1.61	2.58	100.0	Thaïlande
Turkey	1950	C	14.58	12.25	11.21	11.37	9.47	7.18	5.27	6.16	5.48	4.53	4.18	2.30	2.61	3.41	100.0	Turquie
EUROPE																		**EUROPE**
Austria [13]	1951	C	7.73	7.57	7.95	6.40	7.21	7.24	5.42	6.70	7.85	7.93	7.08	5.88	4.91	10.13	100.0	Autriche [13]
Belgium	1950	E	8.02	6.28	6.61	7.21	7.59	8.05	5.46	7.26	7.56	7.54	6.78	5.70	4.90	11.05	100.0	Belgique
Bulgaria	1945	E	9.43	8.62	9.60	10.31	10.27	6.53	7.97	7.82	6.56	5.73	17.15				100.0	Bulgarie
Czechoslovakia	1947	C	9.42	7.65	7.27	8.36	8.80	6.85	6.63	8.43	7.82	7.08	5.67	4.54	3.86	7.58	100.0	Tchécoslovaquie
Denmark	1950	C	9.76	9.21	7.37	6.83	6.91	7.39	7.28	7.34	7.19	6.48	5.87	5.00	4.26	9.11	100.0	Danemark
Finland	1950	C	12.47	9.36	8.17	7.73	8.12	7.65	6.65	7.14	7.19	6.12	5.16	4.14	3.49	6.62	100.0	Finlande
France	1950	E	9.38	5.79	6.55	7.42	7.86	7.95	5.14	6.68	7.38	7.30	6.55	5.35	4.85	11.79	100.0	France
Germany : Federal Republic	1950	C	7.02	7.49	9.04	7.28	7.50	7.44	5.19	7.56	8.08	7.74	6.57	5.30	4.51	9.28	100.0	Allemagne (République fédérale)
Germany : USSR Zone [14]	1946	C	6.94	9.84	8.14	7.46	5.87	4.92	5.97	7.46	7.96	7.72	6.70	6.03	5.05	9.98	100.0	Allemagne (zone de l'URSS) [14]
Great Britain	1951	C	8.61	7.27	6.60	6.30	6.65	7.44	7.02	7.56	7.71	7.25	6.38	5.50	4.86	10.83	100.0	Grande-Bretagne
Greece	1940	C	10.33	11.18	11.48	9.30	7.53	8.21	7.51	6.74	5.72	4.41	4.24	3.70	3.34	6.31	100.0	Grèce
Hungary	1941	C	8.39	8.46	9.13	9.55	6.23	8.39	8.72	7.76	7.22	5.84	5.04	4.57	3.72	6.97	100.0	Hongrie
Iceland	1950	C	12.67	10.17	8.01	8.43	8.57	7.73	6.96	6.41	5.78	5.29	4.81	4.46	3.20	7.52	100.0	Islande
Ireland	1951	C	10.57	9.49	8.81	8.15	6.83	6.70	6.47	6.78	6.09	5.43	5.50	4.35	4.12	10.69	100.0	Irlande
Italy	1950	E	9.25	8.12	8.97	8.74	30.47				22.47				3.90	8.06	100.0	Italie
Netherlands	1951	E	11.68	9.64	8.16	7.85	7.84	7.69	6.94	6.70	6.37	5.90	5.17	4.50	3.74	7.86	100.0	Pays-Bas
Norway	1950	C	9.74	8.15	6.51	6.23	7.00	7.98	8.03	7.64	7.12	6.59	6.08	5.12	4.16	9.64	100.0	Norvège
Poland	1949	E	10.22	8.51	9.64	10.14	9.70	8.20	5.77	7.88	7.30	6.26	4.84	3.49	2.96	5.08	100.0	Pologne
Portugal	1950	C	10.54	9.46	9.47	9.61	9.02	8.07	6.41	6.72	6.22	5.45	4.63	3.93	3.49	6.98	100.0	Portugal
Spain	1950	C	9.20	8.71	8.32	19.17		15.45		13.19		10.94		7.79		7.23	100.0	Espagne
Sweden [15]	1950	C	8.57	8.30	6.53	5.88	6.47	7.58	7.68	7.87	7.78	6.85	6.16	5.35	4.66	10.32	100.0	Suède [15]
Switzerland	1950	C	8.52	8.51	6.60	6.60	7.15	7.61	7.32	7.13	7.57	7.13	6.44	5.40	4.45	9.57	100.0	Suisse
Yugoslavia	1951	E	11.57	8.74	10.51	10.84	9.98	8.22	5.02	5.73	6.60	5.76	4.78	3.58	2.99	5.67	100.0	Yougoslavie
OCEANIA																		**OCÉANIE**
Australia [16]	1951	E	11.04	8.81	7.21	6.57	7.62	8.29	7.63	7.52	6.90	5.84	5.44	4.74	4.39	8.02	100.0	Australie [16]
New Zealand (excl. Maoris)	1951	C	11.70	9.06	7.62	6.49	7.15	7.58	7.14	7.26	6.74	5.92	5.17	4.40	4.22	9.58	100.0	Nouvelle-Zélande (non compris les Maoris)
New Zealand (Maoris)	1951	C	18 54	14.35	13.60	10.55	8.99	7.26	5.44	5.34	4.20	3.31	2.50	1.88	1.52	2.54	100.0	Nouvelle-Zélande (Maoris)

			0-8	8-14	15-19	20-29	30-39	40-49	50-59	60 & +	All ages / Tous âges	
USSR	1939	C	18.53	17.55	8.92	18.08	14.95	8.99	6.41	6.57	100.0	URSS

[a] C = Census; E = Estimates.
[b] Excluding " age not stated ".
[1] Excluding « *population comptée à part* ».
[2] Excluding the nomad Arabs estimated at 55 000.
[3] Relative distribution of 1940 census.
[4] Excluding dependencies.
[5] Sample of census returns.
[6] Sample of census returns.
[7] Excluding about 50 000 tribal Indians.
[8] Relative distribution of 1940 census.
[9] Including Indians.
[10] Jewish population.
[11] 10 per cent sample on census returns.
[12] Malays only.
[13] 1 per cent sample of census data.
[14] Excluding Berlin.
[15] 3.3 per cent sample of census returns.
[16] Excluding Aboriginals.

[a] C = recensement; E = estimation.
[b] Non compris les personnes d'âge non déclaré.
[1] « Population comptée à part » non comprise.
[2] Non compris les Arabes nomades dont le nombre est évalué à 55 000.
[3] Composition par âge évaluée sur la base du recensement de 1940.
[4] Non compris les dépendances.
[5] D'après un sondage des bulletins de recensement.
[6] D'après un sondage des bulletins de recensement.
[7] Non compris les tribus indiennes qui représentent environ 50 000 personnes.
[8] Composition par âge évaluée sur la base du recensement de 1940.
[9] Y compris les Indiens.
[10] Population juive seulement.
[11] D'après un sondage à 10 pour 100 des bulletins de recensement.
[12] Population malaise seulement.
[13] D'après un sondage à 1 pour 100 des bulletins de recensement.
[14] Non compris la ville de Berlin.
[15] D'après un sondage à 3.3 pour 100 des bulletins de recensement.
[16] Non compris les Maoris.