
ROLAND
PRESSAT

The Dictionary of Demography

Edited by
CHRISTOPHER
WILSON

ROLAND PRESSAT

The Dictionary of
DEMOGRAPHY

Edited by
CHRISTOPHER WILSON

Blackwell Reference

First published in French as *Dictionnaire de Démographie*
English translation first published 1985
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Basil Blackwell Ltd 1985
First published in paperback 1988
Reprinted 1989

Basil Blackwell Ltd
108 Cowley Road, Oxford OX4 1JF, UK

Basil Blackwell Inc.
432 Park Avenue South, Suite 1503
New York, NY 10016, USA

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British Library Cataloging in Publication Data

Pressat, Roland
The dictionary of demography.
I. Demography – Dictionaries
1. Title II. Dictionnaire de démographie.
English
304.6'03'21 HB849
ISBN 0-631-12746-1
ISBN 0-631-15579-1 Pbk

Library of Congress Cataloging in Publication Data

Pressat, Roland.
The dictionary of demography.
Translation of: Dictionnaire de démographie.
Includes index.
1. Demography – Dictionnaires. 1. Wilston, Christopher.
II. Title.
HB849.2.P7413 1985 304.6'03'21 84-28407
ISBN 0-631-12746-1
ISBN 0-631-15579-1 (pbk.)

Acknowledgements

The Editor and Publishers are most grateful to Mrs Sarah Matthew who undertook the translation of the French edition of the Dictionary and to Dr Maxine Merrington who compiled the index. They also acknowledge permission from copyright holders to redraw and reproduce line illustrations on the following pages: Academic Press 63; Basic Books Inc. 67; HMSO 17, 186-7, 206; Institut National D'Études Démographiques 57, 127, 137; Plenum Press 122; the Population Information Program, the Johns Hopkins University 114; the Population Investigation Committee, the London School of Economics 157, 206, 214, 221; the Population Reference Bureau Inc. 25, 172, 179; and the Swedish Bureau of Statistics 6.

Preface

A great many people have made contributions to this dictionary; they all receive my thanks. Pride of place must be given to Roland Pressat whose entries, written originally for the French dictionary, form the core of this book and the inspiration for the entire work. I am also grateful to the other contributors for finding time in their hectic schedules to write such concise and erudite entries.

I would also like to note the contributions made by three people at Blackwell. John Davey was the initiator of this project and his enthusiasm for it saw it through several missed deadlines on my part. Janet Godden gave much care and thought to editing the text, and Ray Addicott organised the technical aspects of the work's production with great facility.

Stella Wilks not only typed most of the text, she acted as an extra editor, a sort of unofficial long-stop catching previously unnoticed slips in grammar or style. Doreen Castle of the Population Investigation Committee made available micro-computer facilities for the input of the text. The preparation of material was mainly undertaken at the London School of Economics, but was completed in the highly congenial environment of the Office of Population Research in Princeton. My debt to both institutions is great.

Finally I have one personal comment. Whatever help the dictionary may prove to be in informing or assisting others, there is already one person who has gained immensely from it – I myself. Editing it has required me to read widely on the entire range of subjects embraced by demography; an excellent general education in the discipline and one which I would otherwise have missed. For this, my sincerest thanks to all the others involved in its creation.

Christopher Wilson
May 1985

Note

The work under consideration derives from the project to translate the French edition of my *Demographic Dictionary*. The reader who compares the two versions will see the extent of the difference in editorial spirit between the two.

In the French version I tried above all to fix the language with the desired precision, given the woolliness of the subject. After all, a great part of it consists of technical terms. As a consequence of this point of view the encyclopaedic aspect was a little reduced. Ultimately, my objective was to select only the most assured entries, from the point of view of vocabulary and method.

Chris Wilson, who has made a fine job of the English adaptation, wisely holds a different view. And this is not simply a matter of different personalities, but of his feel for the requirements of the English-speaking reader. It is with a certain regret that I note, however, a certain looseness in the terminology which is likely to be a reflection of the nature of the Anglo-American demography, which is manifestly more liberal than its French counterpart. The French reader would notice, too, that a significant portion of the present work is devoted to techniques more fitting to British or trans-Atlantic, than to French-speaking methods. In short, the distinction which some people are prone to make between French and British demographic practices is evident in a reading of the two versions. This frank adaptation of the dictionary to the expectations of its intended readers is undoubtedly necessary from this point of view and I do not resent the liberties taken with my version, which along with broader encyclopaedic treatments and bibliographical references, may be seen as a token of the work's greater success with an interested public.

Roland Pressat
February 1985

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Editor's Introduction

The technical language of an academic discipline provides its various practitioners with a convenient lexicon of concepts and terms for use in the unambiguous exchange of ideas. Unfortunately it can also act as a barrier to non-specialists who are unfamiliar with the complexities of the vocabulary. To some extent this has been true of demography. Although similar to that of related subjects such as statistics, sociology or economics, the terminology used in demography is subtly different from them, often projecting an arcane and unnecessarily complex image. With the increasing importance of demography, and the much wider use of its methods, this sort of impediment to general communication is a serious problem. One of the purposes of this dictionary is to make demography accessible to other social scientists and to interested non-specialists.

In any subject as large and dynamic as demography the methods, concepts and philosophy of the discipline are constantly evolving. A further purpose of this book, therefore, is to analyse new developments in all areas of demography and to show their relation to more traditional ideas, thereby providing specialists with a means of keeping abreast of current thinking and broadening their knowledge of the field in general.

The dictionary covers the whole range of demographic study, and is particularly strong in certain areas. In his introduction to the French dictionary, the translation of which forms the core of this work, Roland Pressat noted that technical concepts and measures were usually the ones least well-understood and the most in need of clarification. This is equally true of the English-speaking demographic scene; accordingly, they are given prominence here. In addition to strictly demographic entries the dictionary contains terms drawn from neighbouring disciplines which have come to be widely used in population analysis. This is especially true of statistical terms which play an important role in any quantitative subject.

Whether an entry relates to a basic concept or to a complex new technique, the reader will find that it conforms to a standard pattern. A clear, brief definition is given, followed by a more detailed discussion, the length of which is determined by the entry's importance. In all but the most straightforward of entries there are also suggestions for further reading which will enhance an understanding of the subject in question.

The author of each entry is indicated by the initials at the end of its text.

The entries are arranged alphabetically, and reference from one to another can be made in two ways. The first is through the *cross-referencing*. Within an entry, certain other entries are referred to in capital letters. Reading these will help place the original entry in its proper context in the discipline as a whole. The second is the *index*, from which the reader will be able to find other entries in which a term is used and gain a wider appreciation of its use.

As a final point I should mention the relationship between this dictionary and the French version. The English- and French-speaking worlds of demography are not identical. The relatively small size of the francophone demographic community lends its work a coherence of interest and methodology not seen in the larger, more heterogeneous, anglophone world. This difference is reflected in the two dictionaries, the present work covering a wider range of material and methodology than the French volume. Nevertheless, the heart of this book are the entries translated and adapted from Roland Pressat's original. They provide the conceptual framework that forms the very basis of the subject.

Christopher Wilson

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A

abortion The termination of pregnancy before the foetus has become capable of sustaining an independent extrauterine life, i.e. while the foetus is *non-viable*. An abortion may occur spontaneously in the course of a pregnancy, when it is known as a miscarriage, or more technically as a SPONTANEOUS ABORTION, or it may be due to deliberate outside intervention, when it is termed an INDUCED ABORTION. In everyday use abortion often takes on the meaning solely of induced abortion.

Medical tradition bases the definition of the non-viability of the foetus on the duration of pregnancy. A foetus is assumed to be viable after 28 weeks of gestation counting from the date of the last normal menstrual period (the conventional duration of pregnancy). On average this is about 180 days of actual duration. After 28 weeks' duration, the loss of the foetus is known as a STILLBIRTH. This definition of viability was based on the observation that infants born before 28 weeks of pregnancy, or weighing less than 1000 grams, had little chance of survival. Modern advances in the care of premature infants, however, have led to a re-evaluation of the concept of viability. Some infants born at less than 24 weeks' duration, or weighing less than 600 grams, are reported to have survived.

More exclusive definitions of non-viability are sometimes employed in defining the permissible limit for carrying out an induced abortion under legal conditions (LEGAL ABORTION). Assessment of ILLEGAL ABORTION is always problematical since accurate statistics are virtually non-existent. (See also FOETAL MORTALITY.)

RP

Reading

Tietze, C. 1983: *Induced abortion, a world review 1983*. New York: Population Council.

abortion rate A measure of the frequency of abortion in a population in a given period, normally a particular year. Abortions may be related to the total population, or to the number of women of REPRODUCTIVE AGE and may be further specified by age, parity or other characteristics. The term is used with a variety of definitions. Calculation of a rate which is closely related to fertility rates is particularly useful when attempting to measure the significance of INDUCED ABORTION. This is usually only to be recommended in cases where the legal possibilities of employing it are extensive, since it is frequently misleading to try to quantify ILLEGAL ABORTIONS.

In measuring the significance of induced abortion it is usual to calculate the ratio of abortions in a year to the live births in that year or the ratio of abortions to all known pregnancies. (These measures are termed abortion ratios rather than rates.) It is possible, however, to use the term rate for the ratio of abortions in a year to the mean population, which provides a crude abortion rate analogous to the CRUDE BIRTH RATE.

A further measure of abortion often calculated is the TOTAL ABORTION RATE. This is usually taken to be the sum of the age-specific abortion rates found at a particular time and so is a period measure analogous to the TOTAL FERTILITY RATE. It can be interpreted as the number of abortions to be expected over a lifetime by a woman who experiences the average chance of

2 abridged life table

having an abortion at each age. It is expressed as the number of abortions either per woman or per 1000 women and is sometimes known as the lifetime abortion rate.

RP

Reading

Tietze, C. 1983: *Induced abortion, a world review 1983*. New York: Population Council.

abridged life table A LIFE TABLE in which values of the life table functions are presented for certain age groups only, rather than for every single year of age.

When dealing with mortality, data are most commonly given for infant mortality (deaths under age 1), early childhood mortality (ages 1 to 4) and for five-year age groups thereafter. The final value is an open-ended age group (e.g. 80 and above). The convenience of expressing information in fewer than 20 age groups, rather than for up to 100 or more ages, means that the abridged life table is the form most commonly used for the presentation of detailed mortality analysis. Moreover, in some circumstances (dealing with small populations, for example) an abridged life table is preferable even if complete age-specific information is available.

Beyond mortality analysis the use of LIFE TABLE METHODS is possible for any NON-RENEWABLE PROCESS (e.g. first marriage). In such cases abridged life tables are used with age groups appropriate to the problem in hand (most often the conventional five-year age groups).

RP

Reading

Pressat, R. 1972: *Demographic analysis: methods, results, applications*. London: Edward Arnold; Chicago: Aldine Atherton. Chapter 6.

Shryock, H.S., Siegel, J.S. et al. 1976: *The methods and materials of demography*. Condensed edition by E.G. Stockwell. London and New York: Academic Press. Chapter 15.

Woods, R. 1979: *Population analysis in geography*. London: Longman. Chapter 3.

abstinence The avoidance of sexual intercourse. Prolonged abstinence is a

completely effective method of contraception. PERIODIC ABSTINENCE where couples hope to avoid conception by refraining from sexual intercourse at certain times of the woman's menstrual cycles is less effective.

Prolonged abstinence, usually associated with prolonged BREASTFEEDING, seems to have been widespread, most notably in Sub-Saharan Africa (Schoenmaeckers et al. 1981) and parts of Asia and the Pacific (Singarimbun and Manning 1976). These practices were traditionally justified on the benefits to health of child or mother, though their effects in reducing fertility were sometimes explicitly mentioned. In most cases women only were expected to abstain, men being allowed sexual relations outside marriage, or, in polygynous societies, with other wives. Although sometimes enforced by intense social pressure, the duration of abstinence appears to be declining virtually universally and to be of short durations in many parts of East and Southern Africa. The abandoning of prolonged abstinence and breastfeeding has led to significant increases in fertility in some parts of Africa.

Although documentary evidence is scanty it seems likely that abstinence played an important role in the reduction of fertility in nineteenth- and twentieth-century Europe. With the widespread availability of methods of contraception which require less motivation, however, abstinence has become of limited importance.

CW

References

Schoenmaeckers, R. et al. 1981: The child spacing tradition and the postpartum taboo in tropical Africa: anthropological evidence. In H.J. Page and R. Lesthaeghe, eds. *Child-spacing in tropical Africa: traditions and change*. London and New York: Academic Press. Pp. 25-71.

Singarimbun, M. and Manning, C. 1976: Breastfeeding, amenorrhoea and abstinence in a Javanese village: a case study of Mojolama. *Studies in family planning* 7, pp. 175-9.

Reading

Page, H.J. and Lesthaeghe, R. 1981: *Child-spacing in tropical Africa: traditions and change*. London and New York: Academic Press.

accounting, demographic The process of constructing tables that show how populations, classified into a variety of states, change over time. These tables are known as demographic accounts.

The states used in demographic accounting must include all those in which people can originate and all those to which people can move over a specified period. Origin states include birth as well as existence in a region. Destination states cover, at a minimum, survival in a region and death in a region. Both origins and destinations must include a 'rest of the world' state in order to complete the account. These minimum origin and destination states can be further broken down into a variety of different socio-economic categories such as sex, age, race, occupation, educational grade and many others depending on the purpose of the demographic analysis. Demographic accounts differ according to their treatment of time (open or closed accounts), and because of differences in the nature of the flows incorporated (transition or movement accounts).

PR

Reading

Rees, P.H. and Wilson A.G. 1977: *Spatial population analysis*. London: Edward Arnold.

Stone, R. 1971: *Demographic accounting and model-building*. Paris: OECD.

activity rate See PARTICIPATION RATE.

actuarial methods Since the days of GRAUNT the techniques of demographers and actuaries have overlapped in many ways, especially in the use of LIFE TABLES. The focus of actuarial work, however, is the precise interpolation and graduation of probabilities of survival, and the resultant financial and insurance calculations.

Advanced methods consist of highly

complex and precise examples of life table analysis and employ elaborate methods of smoothing and graduating observed data. To this end actuaries have long employed mathematical models and standard life tables and have made use of life tables for highly specific groups of individuals (e.g. the clients of an insurance company), known as life tables for selected heads.

CW

Reading

Benjamin, B. and Haycocks, H.W. 1970: *The analysis of mortality and other statistics*. London and New York: Cambridge University Press.

Ross, J.A. 1982: Actuarial methods. In J.A. Ross, ed. *International encyclopaedia of population*. New York: Free Press.

Smith, D.P. and Keyfitz, N., eds. 1977: *Mathematical demography: selected papers*. Berlin and New York: Springer.

acute disease A disease with one or more of the following characteristics: a sharp or severe incidence, a rapid onset and short course with pronounced symptoms. The opposite of CHRONIC DISEASE.

RSS

adolescent subfecundity The diminished capacity to reproduce during adolescence. It occurs in both the male and the female. In the female it is primarily caused by irregular ovulation after MENARCHE, and in the male by insufficient production of normal sperm. As a result FECUNDABILITY is reduced to relatively low levels.

JB

Reading

Hafez, E.S.E. 1980: *Human reproduction: conception and contraception*. Hagerstown, Maryland: Harper and Row.

Journal of biosocial science. 1977: Fertility in adolescence. Supplement 5.

age Although of self-evident significance and meaning, in demography age is expressed in a number of different ways. A distinction is made between EXACT AGE and AGE IN COMPLETED YEARS. Addition-

4 age composition

ally, it is sometimes necessary, given the sources of data available, to express age as a difference between two specified years. This is known as a period difference. One further definition of age sometimes encountered, especially in statistics using DOUBLE CLASSIFICATION by both age and birth cohort, is AGE REACHED. RP

age composition See AGE-SEX STRUCTURE.

age distribution See AGE-SEX STRUCTURE.

age effect The position of individuals in any demographic state at a given time depends on several factors. Considering purely demographic characteristics we can identify age, duration of exposure to a particular 'risk', time period effects, and cumulated COHORT experience. An age effect occurs when age has an impact on individual experience independently of any other determinants.

To take a concrete example, the fertility of married women in a certain year can be thought of as being composed of effects due to their age, to the duration of their marriages, to the time period in question, and to the previous experience of each cohort. An age effect may explain differences in childbearing among women who are similar in terms of characteristics other than age. As in this example age effects normally need to be considered in conjunction with other effects.

Although age is a powerful determinant of all demographic processes it is nonetheless a surrogate for more fundamental measures, i.e. physiological state (ageing does not occur uniformly to all individuals) and duration of exposure to social norms and influences. In principle it would be better, whenever possible, to relate the variation seen in vital rates to these underlying variables for which age is a proxy. Nevertheless the biological origin of age effects usually endows them with a generality and regularity absent in cohort or time period effects. RP

Reading

Fienberg, S.E. and Mason, W.M. 1979: Identification and estimation of age-period-cohort models in the analysis of discrete archival data. In K.F. Schuessler, ed. *Sociological methodology*. San Francisco: Jossey-Bass. Pp. 1-65.

Hobcraft, J., Menken, J. and Preston, S. 1982: Age, period and cohort effects in demography: a review. *Population index* 48, pp.4-43.

Page, H.J. 1977: Patterns underlying fertility schedules: a decomposition by both age and marriage duration. *Population studies* 31, pp. 85-106.

Pullum, T.W. 1980: Separating age, period and cohort effects in white US fertility, 1920-1970. *Social science research* 3, pp. 225-44.

age errors Errors which can arise from several sources in reported age. The person supplying the information (who may or may not be the individual whose age is in question) may not know the real age, or may wish to conceal the truth, or the interviewer may prefer to estimate the individual's age rather than accept the response, or the age recorded on the interview schedule may not be properly coded for analysis.

Age reporting errors are particularly frequent in many developing countries. For example, studies in Gambia, Ghana, Nigeria and Pakistan found that only 30 to 40 per cent of persons aged 25 to 49 were reported in the same five-year age group both in a survey and in its follow-up reinterview. In the US census of 1970 the comparable figure was 92 per cent. The difficulties caused by age misreporting are exacerbated by the fact that reported ages are often based on other demographic characteristics such as marital status and family size. Studies of such phenomena as age at first birth and at first marriage can therefore be biased by the preconceptions used in the estimation of age.

Although there is a great deal of speculation about the reasons for biased age reports and about the kinds of people who are most likely to misreport their ages there has been little research to determine the most common forms of misreporting.

A few studies have compared ages reported in a survey with more accurate sources of age, but most work has been based on the impact of misreporting on the reported age distribution or on the reported intercensal survival rates for cohorts. Because of the lack of hard information it is difficult to estimate the importance of misreporting for various kinds of demographic analysis. Among the most common forms of age error are AGE HEAPING, AGE OVERSTATEMENT, and AGE SHIFTING. DE

Reading

Ewbank, D.C. 1981: *Age misreporting and age-selective underenumeration: sources, patterns, and consequences for demographic analysis*. Report 4, Committee on Population and Demography, United States National Academy of Sciences. Washington DC: National Academy Press.

Gibril, M.A. 1979: *Evaluating census response errors: a case study for the Gambia*. Paris: OECD.

Shryock, H.S., Siegel, J.S. et al. 1976: *The methods and materials of demography*. Condensed edition by E.G. Stockwell. London and New York: Academic Press. Chapter 8.

age group Individual years of age are relatively rarely employed in demographic analysis. Most work revolves around age groups, variously defined but frequently embracing five years (0 to 4 completed years, 5–9, 10–14 and so on). In certain contexts very broad age groups may be acceptable, even desirable. For example when considering the AGEING of the population it is valuable to deal with three broad age groups: children and young dependents, adults of working age, and pensioners and elderly dependents. RP

age heaping A general tendency to misreport a preferred number as one's age (for example a number thought to be lucky, such as seven, or honourable, such as 100) or to round one's age to a number ending with the digits zero or five. This type of

age misreporting results in a false concentration of persons at particular ages or in particular age groups. (See also AGE ERRORS.) RP, DE

age in completed years Age expressed as the number of complete years lived by an individual. This is frequently termed the 'age at last birthday' and is the method of expressing age most commonly employed in the population at large. In many parts of East Asia, however, age next birthday is traditionally used.

In contrast to age expressed in completed years EXACT AGE offers a more precise definition of age. For example someone born on 19 January 1956 will be exactly 29 years and 3 months on 19 April 1985. This could be expressed as 29 years, 89 days, or as 29.24 years.

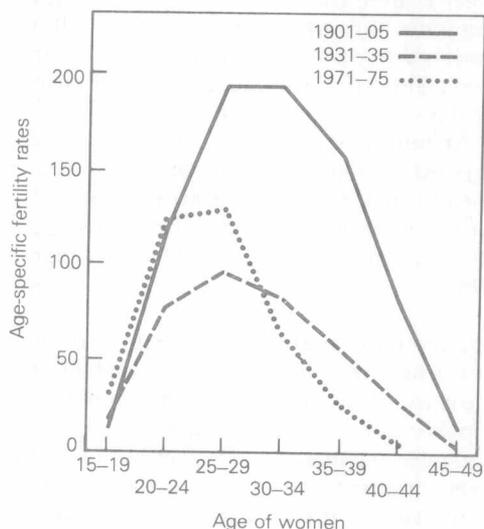
At midnight at the turn of the year all persons of a given age in completed years are the members of one BIRTH COHORT: At the very end of 1985, all persons aged 29 were born in the year 1985 minus 29, or 1956. RP

age overstatement Exaggeration of age in a census or survey. Since it is difficult to measure the accuracy of individual age reports, overstatement frequently refers to net overstatement, the net effect of both overstatement and understatement on the reported age distribution. Overstatement is generally most common among the elderly and for children aged under five. (See also AGE ERRORS.) DE

age pattern A term used to express the way in which the timing or TEMPO of a demographic process varies with the age of individuals. Most processes have distinctive age patterns: mortality shows a bimodal pattern with peaks for infants and old people, fertility is concentrated into the REPRODUCTIVE AGES with a maximum in the 20s, and migration is usually dominated by young adults. The term age profile is also used, so, somewhat confusingly, are age distribution and age structure. CW

6 age pattern of fertility

age pattern of fertility A term used to express the way in which FERTILITY varies with age. It often occurs in the context of schedules of age-specific fertility rates or age-specific marital fertility rates. Fertility is restricted to the reproductive ages (for women roughly 15 to 50), and within this range shows a characteristic pattern. An initial rise from low levels (see ADOLESCENT SUBFECUNDITY) to a peak, usually in the 20s, is followed by a decline. This pattern varies depending on a number of factors: the level of FECUNDITY, the prevalence of marriage or other sexual unions, the degree of family limitation and so on.



Sweden. Age-specific fertility rates 1901-05, 1931-35 and 1971-75.

Source: Swedish Central Bureau of Statistics 1976. Information i prognosfrågor. Stockholm.

Demographers have been able to model these age-specific patterns with some accuracy using descriptive models (see COALE-TRUSSELL FERTILITY MODEL), and with relation to the PROXIMATE DETERMINANTS OF FERTILITY. Since changes in the age pattern of fertility occur with the onset of the use of contraception in a population, studies of the demographic transition pay considerable attention to age patterns. CW

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— and Trussell, T.J. 1974: Model fertility schedules: variations in the age structure of child-bearing in human populations. *Population index* 40, pp. 185-258; also erratum *Population index* 41, p. 572.

Knodel, J. 1977: Family limitation and the fertility transition: evidence from age patterns of fertility in Europe and Asia. *Population studies* 31, pp. 219-49.

age pyramid See POPULATION PYRAMID.

age ratios Measures of the smoothness of a reported age distribution which are helpful in determining the age groups that are likely to be most affected by underenumeration or by age misreporting.

The age ratio for an age group is normally taken as equal to the number reported in that age group divided by the number obtained from adding one-third of the numbers in the preceding and subsequent age groups and one-third of the reported number in the age group in question. (See also AGE ERRORS.) DE

Reading

Shryock, H.S., Siegel, J.S. et al. 1976: *The methods and materials of demography*. Condensed edition by E.G. Stockwell. London and New York: Academic Press. Chapter 8.

age reached The age reached by the members of a particular COHORT in a specified period, normally a calendar year. It is employed most commonly in the context of DOUBLE CLASSIFICATION of vital events. When dealing with mortality, for example by specifying the age at death in completed years and in terms of age reached (i.e. the age which individuals reached in a year, or would have reached if they had survived), an exact estimate of mortality within each cohort can be reconstructed. RP, CW