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Investigating Explanations of 'Normal' and 'Abnormal' Mortality in the Indian Census, 1881-1951

THE Indian Census is a rich source of material for the study of the application and evolution of concepts of population derived from studies of European population in a non-Western context (Barrier, 1981 : xi-xii). In a recent paper we have shown how Indian Census Reports have applied an essentially unchanging concept of sex ratios to Indian statistics (Fisher and Ifeka, 1984). This essay focuses on the concept of mortality, and describes the change in its meaning and use brought about largely by increasing accuracy of census returns which highlighted inadequacies in the distinction between 'normal' and 'abnormal'mortality under Indian conditions. The late nineteenth and early twentieth century census Reports endeavoured to establish 'normal' mortality patterns as models for comparison with periods when 'abnormal' mortality occurred. By 1951 Census writers had accepted that the frequency and distribution of mortality in India at different ages and between the sexes is determined by a changing relationship between factors which operate under all conditions. In what follows we discuss the development of these two viewpoints.

Ideas on Mortality

Between 1834 and 1906 famines caused by 'an absolute dearth of food' (Akroyd, 1974 : 56) were frequent and severe in British India (1881 : My : 41). Millions of deaths in excess of the normal impressed Census Reporters who had. readily perceived the incidence of mortality to be strongly influenced by

recurring visitations of pestilence and dearth (of. 1891 : At: 61). In between these times of crisis, which Hatton in 1931 referred to as 'lean decades*, came periods of relative prosperity that he called 'normal or sumptuous years' (1931 : AI : vl : 108-9). On account of these marked variations in economic conditions and the physical health of the population, 'violent ^ueiur^iom' in mortality rates occurred both within and between decades (1881 : AI : VI : 142). For the early Census Reporters mortality during periods of famine and epidemics was so elevated as to be classed abnormal and thus due to "incidental' factors (1891 : AI : 62; 1921 : BP : v8 : 9). This 'abnormal mortality', or as the Government Actuary wrote in 1881, a death rate so high that it may 'even reverse the ordinary movements of population' (18S1 : AI : vl ; 142), occurred in the severe famines of 1896-8 and 1899-1900 when about 5 million persons in British India and the Native States died, and this despite the improved efficiency of Famine Relief operations (1901 : AI : vl : 84). In the Bombay Presidency alone 'a succession of famines, bad seasons and plague epidemics unrivalled in the recent history of any other part of India' (1901 : AI : vl : 54) caused over two-thirds of a million 'excess' deaths, which along with a diminished birth rate resulted in a decline of one and a half millions in the population in 1901 from the total numbers estimated for the Presidency in 1891 (1901 : AI : vl : 54-5).

Because deaths during famine and from epidemic diseases were so common an occurrence in India, mortality rates for a ccnsal decade \vere frequently high. Even under conditions where severe famine or plague was absent European officials found it difficult to decide what could be accepted as 'normal' mortality in a population for whom the experience of lif; and dc^th was so different to that of most West Europeans. Baines, for example, explains that while the birth rate in 1891 at 48 per mille is far higher than in Western Europe.

> . . . the death rate is equally abnormal, even if we omit the more frequent occurrence of famine and epidemic disease in India, and may be taken to reach, on an average, 41 per mille.
> (1891 : AI:61).

Although we could find no explicit statement on this matter in the Census Reports, a careful reading suggests that the early Census details made certain assumptions about mortality in India. In the first place they thought that there were two kinds of mortality, the 'normal' and 'abnormal', each applied by its own aetiology and distribution over the ages and between the sexes. Second. they held that a 'normal* mortality pattern could be found which should express the average and regular incidence of death over the various categories of the population. In the opinion of one Reporter normal mortality was determined bymore permanent conditions in contrast to abnormal mortality which is brought about by 'disturbing factor(s) [1901 : AI : Mem : 16], and

is associated with 'periods of scarcity, and plague (1901 : AT : Mem : 17). In the same way a pattern could be identified which was characteristic of exceptional periods of stress and strain' (1911 : AI : v : 158). Once these two patterns had been determined the categories of persons most likely to die in famine would be known in advance of a calamity, and this would facilitate a more efficient delivery of relief to the most vulnerable sections of population. What early Census Reporters were looking for were sets of figures which would : (i) accurately describe the Indian situation at any time; (ii) be comparable with figures derived from Western European populations; and (iii) provide useful predictions of those categories in the population who were likely to be most at risk in a calamity.

Consequently early Census Reporters attached considerable importance to locating figures which would constitute normal and abnormal mortality curves. As we shall show some Reports eventually came to distrust the idea of even searching for such figures. But the authors of the All-India Reports in 1881, 1891, and 1901 believed they had to interpret the returns as reflecting two kinds of mortality, the normal and abnormal, each distinguished by a lesser or greater frequency of mortality at the different ages.

In the 1891 All-India Census Report, Baines tries to distinguish abnormal mortality and its special causes from normal mortality due to ordinary causes. But he finds ordinary causes may also play a part in elevating the rate of abnormal mortality and so become absorbed within the category of special causes. Although other Census Reporters appreciated with Baines some of the difficulties in drawing a hard and fast distinction between ordinary and special causes of mortality, they were certain that famine imposed on the population excess and therefore abnormally high levels of mortality in general and at certain ages in particular. Analysis of reports from famine afflicted districts contained in the 1881 Census showed that the very young, the elderly, and frequently (but not always) adult males were most diminished by famine(1881 : AI : vl : 169-70; 1881 : MP : vl : 85-91: 1881 : My : 54-5). Census Reporters therefore concluded that because the sexes were unequally reduced in numbers at different ages, famine mortality changed the relative proportions of the age groups and sexes in the population.

In an attempt to distinguish clearly the major features of abnormal mortality Baines identifies famine and epidemics of small pox and cholera as 'incidental' or special factors, which for a short period of time reduce the birth rate and greatly elevate the death rate, thus temporarily lowering the rate of population increase (1891 : AI : 62). Baines contrasts these special or restraining factors with the 'main normal factors' in population increase such as age of marriage, fertility levels and migration (ibid) He also identifies two main causes of abnormal mortality, small pox and cholera, which were recorded as the reason for 8 per cent of all deaths listed in the death registers during 1881-91: analysis of the same sources indicated that 66 per cent of all deaths were attributed to

fever (ibid). But as Baines notes 'the generic title of fever' encompasses many maladies whose symptoms included a high temperature, and so in reality other diseases might be the primary cause of death (ibid). Baines is therefore reluctant to specify whether fever is an abnormal or a normal cause of death. He recognises, though, as does Gait in 1911, that famine increases 'mortality from ordinary causes' such as bowel complaints and intermittent fever, so the incidence of death from these 'ordinary causes' rises at such times considerably above 'the normal rate' (1891 : AI : 63; 1911 : AI : vl : 57).

Baines's findings were based on unadjusted figures. But it was the position of Hardy, the Government Actuary employed by the Census Superintendent from 1881-1901, that changes in the relative proportions of the sexes and age groups in the population on account of famine mortality could only be accurately shown after making several adjustments to the returns to allow for inaccuracies in the figures. Hardy uses the smoothed figures to derive a normal curve of mortality. In his opinion this operates over the longer term as a constant factor in Indian mortality, however obscured it is by 'violent fluctuations' in the death rate that occurs in famine and epidemics. He seeks a knowledge of the normal incidence of mortality at particular ages, but this is very difficult to obtain, because even were the returns accurate within an acceptable margin of error 'periodical visitations of famine or epidemic entirely disturb, and even reverse, the ordinary movements of population' (1881 : AI : vl : 1 : 142). He assumes, nevertheless, that normal mortality exists and is identifiable. Accordingly projected normal mortality may be compared with the recorded but 'highly inaccurate' proportions of the sexes returned at the different ages (1881 : AI : vl : 148, 152), and adjustments made by superimposing a projected normal mortality curves on the recorded incidence and distribution of death. As Hardy and his Actuarial successors recognised, famine mortality obscures the ordinary pattern of mortality, and there is also a notable tendency for errors in the returns to be compounded at such times. But Hardy still believed that normal mortality can be specified and used to ascertain the extent to whlch famine and epidemics alter the relative proportion of the sexes and age groups in the population. (1881 : AI : vl : 165-6, 170-1) : see also 1901 : AI : vI : 474-7; 1911 : BP : v7 : 76; 1921 : AI : vl : 133).

For the early Census Reporters a most heartrending problem associated with interpreting the Indian Census data, related to the accuracy of the recorded figures. Comments in Census Reporters of the late nineteenth and early twentieth centuries ranged from that of the Government Actuary, who referred to the uncorrected figures as 'highly inaccurate', to the statements of some Reporters who argued that 'the margin of error is small and fairly constant, and the general correctness of the returns (is) most remarkable' (1891 : BP : v7 : 58; 1901 : AI : vl : 81). The problem of accuracy chiefly concerned two phenomena : widespread mis-statement of age, and the low numbers of females recorded in particular age groups. Mis-statement of age was attributed to

ignorance, and to a taboo against stating one's age in chronological years as well as to people's preference for certain numbers, and a tendency to perceive age according to social status. Then the small number of women returned in the 10-15 year age group, plus the low numbers of females as compared to males recorded as having died during periods of famine, also encouraged Census Reporters to query the accuracy of the figures and the validity of estimates and conclusions drawn from them. (See Fisher and Ifeka, 1984).

Disputes about the accuracy of Census figures made it difficult for Census officials to decide whether inadequate recording, especially of female deaths, played the more important part in shaping the known incidence and dispersal of mortality among the sexes at different ages, or whether age and sex-selective factors triggered different mortality patterns for each sex in famines and plagues. Consequently Census Reports found it hard to decide whether it was the sex-selective influence of famine tending to hit males more severely than females, that was more important in shaping the high proportion of male deaths registered for upper India in the severe famine of 1879 (1881 : AI : vI : 148 but see 1921 : BP : v8 : 113), or whether there was an under-recording of female deaths due to 'epidemic fevers' to which 'prime of life' females were especially vulnerable (1911 : AI : vI : 58).

Smoothing the Figures

The difficulties believed by many to be inherent in using uncorrected Indian data led Government Actuaries between 1881 and 1931 to subject the uncorrected figures to what Gopalaswami in 1951 euphemistically called 'a kind of purification ceremony' (1951 : AI ; 1A : 64). Smoothing was intended to represent normal mortality trends over several decades, despite interludes of famines and epidemics which interrupted the normal flow of demographic events.

Several ways of calculating normal mortality are proposed and applied in the Census Reports. All presuppose that the Actuary has sufficient knowledge of normal mortality to enable him to decide, in advance of seeing the actual returns and vital statistics for the decade, the abnormalities in the figures that needed elimination so that he can 'dispense, to some extent, with the actual numbers' (1891 : AI : 62). All the techniques assume that normal mortality can be defined by commonly recurring features said to characterise mortality in normal or average times in India.

Firstly, figures may be adjusted by taking as a baseline a normal decade in which mortality is regular and not upset by pestilence or dearth, so that the dispersal and frequency of mortality at the different ages in 'normal years' can be compared with its distribution and incidence in a decade marred by famines of 'exceptional' severity (1881 : AI : vI : 169; 1881 : M : 85). The Reporter then assumes that in an abnormal period mortality is dispersed among the age

groups and sexes according to the proportions found in a normal decade. From the difference between normal mortality figures calculated for the famine decade and the actual recorded number of deaths during that period is derived the excess or abnormal mortality. In the 1911 Census in the Bombay Presidency Reporters applied the method of difference, and in a series of tables showed that in addition to a normal mortality rate of approximately three millions in the decade 1901-11, excess mortality due to famines and bubonic plague amounted to about a million deaths; total mortality for the period thus amounted to around 4 millions (1911 : BP : v7 : 33-8). In this way the Reporter allowed for fluctations that upset 'the normal longevity and fecundity of the people, i e. the normal birth and death rates' (1901 : AI : v1 : 474), and which therefore disturb the normal age distribution. Smoothing the figures thus enables Census officials to overcome the discontinuities imposed by famine and pestilence on the flow of normal mortality. As Marten noted, smoothed mortality curves represent the incidence of death as a 'continuous reel' of mortality events (1921 : AI : v1 : 131).

The same technique could also be used to test the likely accuracy of mortality returns in a famine district by comparing the figures with either the mortality experience of a non-famine district in the same decade, or with figures for the same district but obtained some time previously in a normal decade. Hardy uses this method in his 1881 Actuarial Report. As he observes a major indicator of normal mortality is the dip in the death rate in the 5-15 years old group. He believes this to be a correct reflection of mortality in normal periods, and not just a reflection of age mis-statement owing to peoples' tendency to plump for ages in round numbers on either side of the 10-15 year old group. Hardy notes, however, that in famine districts in Mysore and Madras there was a noticeable lack of depression in the age at death among 5-15 year olds. So he proposed that these figures should be corrected for abnormalities due to a lack of depression in the mortality rate at this age. This done, he proceeded to estimate average mortality rates for the 5-15 age group during 1871-81 (1881 : AI : v1 : 149).

Another example of smoothing techniques used to arrive at normal mortality curves in abnormal decades is contained in the 1901 Bombay Presidency Report. Enthoven assumes the 1891 figures are normal and examines the percentage variation in the incidence of widowed women in the Presidency at the 1881 and 1901 enumerations. From the difference between the two sets of figures he obtains 'the percentage departure from normal in widowhood' that is due to famine (1901 : BP : v9 : 91). Using the same method Enthoven tests the mortality rate in famine-affected districts in the Bombay Presidency and finds that the incidence of widows compared to widowers is lower than in normal periods. He therefore concludes that whereas the figures mostly indicate that famine falls with greater severity on adult males than adult females, in 1891-1901 both sexes at the adult ages were almost equally affected

by famine in the Presidency while the very young and aged of both sexes were the most diminished (1901 : BP : v9 : 91; see also 1911 : AI : v1 : 149). Enthoven's findings in this respect are supported by the mortality figures for Mysore in 1877-78 when that state was hit hard by famine (1881 : My : 41-55).

Secondly, the concept of normal mortality could also be used in the sense of an average, which Hardy arrives at by taking the numbers in an age group of either sex (i.e. 20-24 year old males). He compares these figures with those for the same cohort of males returned in 1891 in the 10-14 year old group, and then combines the two sets of figures to arrive at the average age distribution for the cohort between 1891 and 1901 (1901 : AI : Mem : 5-6). Alternatively, average mortality is calculated by combining the mortality returns for 1881, 1891, and 1901. Hardy gives a double weighting to the figures for 1891, because these were more representative of the average or normal decade (1911 : AI : v1 : 91), and then averages out the returns for the past twenty years. The Actuary in 1911 believed these to 'represent the experience of average periods' (1911 : AI : v1 : 159), and the 1921 Government Actuary also adopted this method. His intention was to arrive at the normal distribution and frequency of mortality in a decade in which the ordinary pattern was greatly obscured by influenza mortality, but by averaging he hoped to represent the normal flow of mortality over the decade (1921 : AI : v1 : 129).

Finally, the figures may be smoothed by applying standard formula such as Bloxam's, which assumes a normal distribution of deaths over the age groups so the bunching of ages at round numbers may be overcome (1901 : BP : v9 : 85; 1911 : BP : v7 : 76). [This method was used from 1901 in the Census Reports considered here, though the author of the 1921 Bombay Presidency Report was unclear as to the extent Enthoven had used Bloxam's formula in his All-India Report of 1901 (1921 : BP : v8 : 83)].

Another technique based on the same principle is the life table, which assumes an increasing or stationary population with a regularly recurring distribution of mortality that increases progressively with age. The Sundburg formula represented a declining life expectancy at each age in an ascending series according to the mortality experience of Western European countries at the turn of the century. Between 1901 and 1931 Census Actuaries whose reports are examined here believed they had found in Sundburg's model a methodologically superior tool for calculating normal mortality compared to Bloxam's formula. Accordingly, they applied Sundburg's model to the uncorrected Indian mortality figures. (1901 : AI : Mem : 7-9; 1911 : AI : v1 : 163-65; 1931 : AI : v1 : 108ff.).

The techniques for arriving at normal mortality discussed above share the assumption that the frequency and dispersal of mortality over the age groups can be known in the light of information about average or normal mortality patterns in non-famine decades. But as already indicated these techniques differ in respect to the means used to depict normal mortality across decades

disturbed by famine and epidemics. Census officials applying these techniques to uncorrected figures were cautious in their assessment of the validity of their smoothing, but nevertheless felt committed to finding a mortality pattern in British India which could be used for comparison [both with 'abnormal conditions' in India and with European trends] and for prediction.

Inconsistencies

From 1901 Census Reports became more sensitive to the difficulties involved in smoothing the uncorrected figures, partly because they were in agreement with Risley and Gait who in 1901 repeatedly emphasised how famine 'has such a great and far reaching influence on the age distribution' (1901 : AI : v1 : 476). For one reason or another in the next few decades Census officials slowly began to accept that, as Risley and Gait had pointed out, it is virtually impossible to identify a 'normal' birth rate, because famine alters the proportions of the sexes and suppresses the birth rate. (1901 : AI : v7 : 479). Gradually many officials moved towards the view that so far reaching were the effects of famine on the fertility, mortality, and migration patterns of the population that its consequences could not be 'discounted' by smoothing the uncorrected figures (*ibid*).

Looking at the mortality returns for the Bombay Presidency in this light, the author of the 1901 Census Report contests the view that numbers returned against each group in the census can be adjusted to represent the normal curve of mortality in 1891-1901. Enthoven argued that to redistribute entries at age 25 within the adjacent ages of 22 to 28 years 'would not cure such an error i.e. mis-statement) in the returns' (1901 : BP : v9 : 80), because many people just did not know their ages, or that of their womenfolk within such a narrow range as the six years proposed by the Actuary, who was intent on applying smoothing formula to eliminate bunching at round numbers in multiples of 5, 4 or 16. In Enthoven's view, adjustment could result in even greater errors that compounded original inaccuracies; consequently smoothed curves were very uninformative about the actual mortality experience of the Indian population. As he saw it, the 'formidable influences' of plague and famine had been operating on the population of the Presidency; these facts upset the ordinary distribution of the population by age periods and had to be accepted as resulting in an 'uneven incidence' of mortality rather than be smoothed over (1901 : BP : v9 : 80). After adjustment, writes Enthoven, the statistics . . . would lose the chief points of interest that they possessed' (ibid), as the reflection of the operation in the population of 'special causes' of mortality (1901 : BP : v9 : 85).

Marten, too, thought that since 'The Indian figures are the result of facts which differ essentially from those in Western countries' (1921 : AI : v1 : 134), they should not be smoothed over. In particular, adjusting the age entries

ignored the fact that many more adult women then men had died in the influenza epidemic of 1918-20. Because the figures in 1921 were so 'largely influenced by a concentrated and selective mortality', Marten believed that smoothing the figures into a normal pattern resulted in inaccurate statements about fertility and mortality between 1901-11 and 1911-21 (1921 : AI : v1 : 131). In 1921 the unadjusted figures showed that the proportion of the population returned in the category married female of child bearing age had declined, but the proportion aged 0-15 years had increased. In Marten's opinion these trends suggested that in the early 1920s the birth rate would be lower than normal, but by 1931 it would rise sharply on account of the entry into the child bearing years of a new female cohort whose size resembled that of the present cohort of married women aged 15-45 years when they commenced bearing children, but who were subsequently severely smitten by the influenza epidemic.

Ten years later Hutton in 1931 confirmed that in some tracts the population had indeed increased phenomenally by up to 54 per cent (1931 : AI : v1 : 28-9). This rapid rate of population growth challenged the hitherto steadfastly held conviction of the Actuaries that Sundburg's progressive population model (which assumed a constant proportion of persons in the 15-45 age group) also reflected the composition by age of the Indian population (1921 : AI : v1 : 133), although the 1881 Reports on the Madras Presidency and Mysore State had shown that such assumptions about the sex ratio were untenable (1881 : MP : v1 : 98-9; 1881 : My : 54-5). Then in 1901 Enthoven had tested the utility of the life table and had concluded that 'the mathematical expression . . . (of mortality) is not mathematics, but guessing' (1901 : BP : v9 : 79). By 1931 this early scepticism as to the utility of smoothing had developed into a fairly general acceptance that the Indian figures did fluctuate. Government Actuaries could then contemplate abandoning the (questionable) assumption that a constant fertility rate conteracted fluctuating mortality rates, and so stabilised the age distribution of the population.

Thus, from 1901 onwards Reporters were increasingly willing to accept the Indianness of the mortality figures, and by 1921 this assumption was quite marked in the Census Reports (1921 : AI : v1 : 134). But because Census officials still analysed Indian mortality by means of the oftmooted distinction between abnormal and normal mortality, they had continued (somewhat uneasily) to discuss the causes of normal as distinct from abnormal mortality; some had even sought to establish the normal curve of mortality in disturbed decades (1881 : AI : v1 : 170-2; 1891 : AI : 61; 1911 : AI : v1 : 91; 1921 : BP : v8 : 118-9).

On the whole, from 1881 to 1931 the Census Reports were entrapped in the distinction between 'special' as distinct from the 'ordinary' causes of mortality. In the opinion of some officials physiological factors partly explained high famine mortality; Plowden, for example, had argued in 1881 that there was a

'deficiency of stamina in the native races' (1881 : AI : vl : 172). A related notion was Gait's concept of the 'extreme unhealthiness' of the population and of women in particular, which he thought might account for their greater mortality in outbreaks of cholera, malarial fevers, and bubonic plague (1911 : AI : vl : 211). [Ten years earlier, though, Risely and Gait had drawn attention to the alleged 'constitutional superiority' of adult women, which in their opinion explained women's greater survival in times of dearth compared to adult men (1901 : AI : vl : 119]. Other Reports, however, gave high analytical priority to establishing that 'social habits' like early child marriage and unhygienic natal practices largely accounted for the very high rates of maternal mortality (1911 : AI : vl : 57ff). Also proposed by Sedgwick in 1921 and Hutton in 1931 as a cause of the greater adult female mortality in epidemics was women's work, which confined them to kitchens where grain bins were stored that attracted rats carrying the plague (1921 : AI : vl : 13ff; 1931 AI : vl : 7).

These attempts to identify the special causes of abnormal mortality and thus validate the distinction made in 1881 between abnormal or exceptional mortality, and the ordinary distribution and frequency of death, had come to no definite conclusion by 1931 as to the aetiology of mortality in famine and epidemics. But the debate was instructive in at least one respect. It indicated the intricacy of causation in mortality, a point made some time earlier by Baines who had realised that during a famine many people died from what he called 'ordinary causes'.

For reasons mentioned above, the Reporters became more aware after 1931 of inconsistencies in the idea that two kinds of mortality existed, and that these were quantitatively expressed on the one hand in abnormally elevated and on the other in normal mortality figures. In 1951 Gopalaswami had argued that since the overall pattern of mortality in all periods is empirically verificable by random sample surveys (such as that which he carried out in Independent India), the figures including well known margins of error should be accepted for what they are (1951 : AI : IA : 58). He noted 'the elaborate arguments' of preceeding generations of Census writers, which purportedly explained why more adult men than women died in famines, and observed that in the past famine was more prevalent and alternated with more prosperous decades. Consequently over the years death fell unevenly on the sexes and the age groups; this gave rise to a demographic situation in which the proportion of the sexes at different ages in the population had continually changed (1951 : AI : IA : 61). Sedgwick had hoped to find the 'unknown factor', which determined the mortality rate at any given time (1921 : BP : v8 : lxxxi) and thus shaped the distribution of the sexes at different ages in the population. But to Gopalaswami's way of thinking it was pointless to search for an 'unknown factor' because the sex and age composition of the population is a consequence of 'changing conditions'. Therefore there can be 'no uniform rule governing

this inequality' in the proportion of the sexes at different age periods (1951 : AI : IA 61).

Gopalaswami was confident that despite continuing but known inaccuracies in the census returns and vital statistics, especially during famine and epidemics, the data represented the population's mortality and fertility experience more accurately than hitherto (1951 : AI : 1A : 58). We can therefore accept what the famine mortality figures suggested, namely that as many people in famine affected districts died from diseases contracted in consequence of their greatly weakened health as died from sheer starvation. A case in point is the 1943-44 Bengal famine, which Census officials believed had resulted in the death of an estimated 1.5 million persons (1951 : AI : 1B : 292). Many people succumbed, it was said, because 'In normal times malaria, cholera, and small pox are endemic in Bengal' and the population was chronically enfeebled. (1951 : AI : IB : 292). [More recently Greenough has calculated that between 3.2-3.8 million died in 1943-44; Greenough, 1982 : 299-315]. For his part Gopalaswami believed that mortality figures in Bengal prior to and during the great famine indicated a continuing and close association between 'health conditions in normal times and the high famine mortality' (1951 : AI : IB : 292).

The foregoing strongly implies that any remaining committment should be forsaken to analysing mortality in terms of two distinct types, each determined by a specific aetiology. The terms abnormal and normal mortality may still be used. but it is accepted that Reporters need no longer cite Indian mortality figures at each Census in order to prove that the frequency and dispersal of mortality did really diverge from a supposed norm. From henceforth it may be taken for granted that the notion of a norm to which all mortality should conform is irrelevant.

Abandoning the Norm

Thus, the contemporary view that the frequency and dispersal of mortality in India between the sexes at different ages is determined by a changing relationship between factors which operate under all conditions, did not emerge all of a sudden in Gopalaswami's 1951 Census Report. Rather, this more modern notion evolved slowly over the decades in opposition to the earlier belief that there were two kinds of Indian mortality, the normal and the abnormal.

Of the census analysts, Gait was among the first to fully appreciate that the distinction between abnormal and normal mortality was fraught with inconsistencies and was not be very helpful. In his 1911 Report he noted that famines occur at almost predictable intervals. The elevated mortality with which periods of dearth were associated was normal in the sense that the figures reached their peak at regular intervals. Indeed, argues Gait, the frequency and distribution of famine was almost as predictable within known

limits as ordinary mortality (1911 : AI : vl : 56-7). Consequently, Gait was inclined to the view that since famine deaths occurred regularly they can hardly be termed abnormal. Rather, within the Indian context, these mortality figures were very normal.

Four decades later Gopalaswami pursued Gait's realisation that normal mortality could neither be closely nor exactly distinguished from so-called abnormal mortality. But whereas Gait concentrated on criticising the notion of normal mortality, Gopalaswami arrived at the same conclusion by way of an examination of inconsistencies in the way Census officials used the category abnormal mortality. From this examination he concluded that abnormally high levels of mortality should be treated as normal Indian phenomena. The category abnormal mortality was therefore redundant.

Gait may well have been sceptical about both categories, but he chose to emphasise the particular point that in India famine occurred regularly and was thus a normal event. Therefore, the identification of famine mortality with the abnormal was logically inconsistent. As he had send, so important was the part played by famine in determining the composition of the population for decades as truncated cohorts moved up the ages, influencing on their way the incidence and dispersal of mortality, that all decades became abnormal in some respects. In India. he concluded, 'there can be no such thing as a truly normal decade (1911 : AI : vl : 151).

From this recognition it is a small step to concede, and did Gopalaswami in 1951, that the conception of 'abnormal' and 'normal' mortality should be abandoned. In its place is the value-free notion that the incidence and dispersal of mortality among the sexes at their different ages is an expression of a changing relationship between many factors operating continually in Indian life.

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