Introduction

One of the most significant of Richard Smith’s achievements as Director of the Cambridge Group has been his success in further expanding CAMPOP’s geographical reach. His own research had led him to make comparisons between medieval England and the contemporary developing world, and caused him to question some demographers’ usage of evidence derived from historical demography in the development of their theories of fertility change in modern Asia, Africa and Latin America. His encouragement therefore of the application of the techniques of historical demography beyond western Europe followed logically, and brought to the Group a steady flow of visiting researchers, research associates and graduate students with interests in areas such as modern Brazil, China, India, Japan, South Africa, Tanzania and Uganda.

The research which will be discussed in this paper was begun during a three-year research fellowship at the Cambridge Group between 2000 and 2003. The problem on which the project originally focused was that the Great Lakes region of eastern Africa did not seem to fit with either of the standard theories of Africa’s transition to rapid population growth during the colonial period, c.1900-1960.

One school of thought, led by Denis Cordell and Joel Gregory, argue that colonialism’s greatest impact was on fertility, which is thought to have increased as periods of post-partum sexual abstinence and breastfeeding shortened.1 It is assumed that the reduction of birth intervals occurred earliest where the colonial impact was greatest, among peoples that were most involved in the commercial economy and that enjoyed the best educational, maternal and child healthcare facilities. Bogumil Jewsiewicki, Gavin Kitching and Kenneth Swindell moreover have suggested that colonial labour demands and cash cropping encouraged earlier marriage and pressured parents to expand the domestic labour supply by increasing the number of children they produced.2

This analysis is disputed by scholars such as John Iliffe and Jack Caldwell, who note that there has been little evidence to date of an increase in fertility before the second world war and therefore place most emphasis on changes in mortality patterns as the driver of demographic growth. They argue that death rates declined from the 1920s due to the wealth derived from newly introduced cash crops, new networks of roads and railways, and the diffusion of western medicine, maternity facilities, missionary activity and primary education. In their opinion, African fertility had

---

always been relatively high because of an unusually strong demand for human agricultural labour, ‘traditional religious pronatalism’ and a ‘horror of barrenness’. They believe that fertility did increase during the colonial period, but only after 1945, once population growth had already begun. The cause of this later rise in fertility is hypothesized to be a shortening of the durations of post-partum sexual abstinence and lactation after the second world war, due to improving child survival rates and the spread of Christianity and female education. Scholars such as Anne Retel-Laurentin and Anatole Romaniuk also emphasise the positive role of later colonial interventions in stimulating higher fertility, arguing that improvements in nutrition, the medicalization of childbirth and above all the antibiotic treatment of STD-related sterility released the physical limitations on reproduction imposed by diet and disease.

Within these opposing points of view there is a large measure of agreement, which is that changes associated with development and modernization, in their various guises, triggered the rapid transition to spectacular demographic increase in twentieth-century Africa. A number of examples from across Africa, the Kikuyu of Kenya, the Chagga of Tanganyika, Salisbury in Southern Rhodesia, Katanga in the Congo, appear to support this correlation. Even in western equatorial Africa, where fertility was significantly lower than the continental average, population growth began earliest in areas of greatest economic and social development. The experience of the Great Lakes region of East Africa was very different. Areas such as Buganda and Buhaya experienced population decline or only delayed and then slow growth by natural increase, despite having some of the wealthiest populations in colonial Africa, and unusually well-developed administrative, medical, missionary and educational systems from an early date. Meanwhile districts such as Ankole, which were relatively neglected by the colonial state and whose populations were cash poor, experienced some of the fastest rates of demographic increase ever recorded in human history.

This project focused on three neighbouring societies within the East African Great Lakes region: Ankole,8 Buganda, and Buhaya,9 which were historically home to

---
11 Iliffe, Africans, p.240.
The colonial-era kingdom of Ankole was created by the amalgamation of the large pre-colonial kingdom of Nkore with a number of smaller polities to the west, which had previously enjoyed varying degrees of independence.
the Nkole, Ganda and Haya ethnic groups. These societies were selected because of
their large size and historical importance, because they were demographically so
unusual, and because they shared key geographical and cultural characteristics. Their
languages are to varying degrees mutually intelligible; their social relationships have
all been shaped by a history of monarchical government; their indigenous religions
were based on similar core beliefs and structures; and all three societies have been
heavily Christianized over the past century. That Ankole’s population grew by natural
increase so much faster than Buganda and Buhaya’s during the twentieth century
cannot be simply explained by reference to some overriding cultural difference, such
as the presence or absence of circumcision. It is the fundamental cultural similarity of
these societies that makes their demographic divergence so interesting.

The problem faced by historical demographers is that standard sources of
population information are so uneven in quality. Post-colonial censuses are generally
of a good quality, except that the 1980 Census of Uganda was lost during the civil
war, and nation-building post-colonial governments rejected the use of ethnicity as a
factor in recording demographic detail. Given the scale of ethnic migration in this
region, major demographic shifts may in large part have resulted from changes in the
make-up of the measured population. Fertility and demographic and health surveys
are valuable but began too late to say much of significance regarding colonial change.
Most colonial censuses did little more than identify major variations in local
population growth rates, and systems of vital registration were insufficiently complete
to allow for the calculation of reliable demographic rates.

For this project therefore alternative sources of demographic information were
utilised in order to compensate for the inadequacies of official data. The most
important were the registers of baptism and marriage from one Catholic parish in each
of the case study areas, Bukoba from Buhaya, Kisubi from Buganda and Nyamitanga
from Ankole. Also significant were registers from the maternity wards of local
hospitals, almost all of which were located within Buganda. In addition, a large
number of small-scale demographic surveys were identified from the colonial era
which provided the kind of information recorded by post-colonial censuses. And
finally around 250 individuals and focus groups were interviewed about their
reproductive experiences and attitudes in order to help explain the quantitative
changes recorded in the various datasets.

Bukoba, Kisubi and Nyamitanga were selected for this study because of their
age, central location, large size, and relative ethnic homogeneity. Ideally a larger,
random sample of parishes would have been utilized but the reluctance of many local
clergy to participate in the project as well as the expense and time involved in the
entry of a very large quantity of unusually difficult data prevented this. Catholic
registers were used simply because other churches were unwilling to allow their
parishioners’ personal details to be copied. All three registers began early in the
twentieth century. The Bukoba datasets end in the mid-1950s, as full census
information becomes available, while the loss of the 1980 census in Uganda meant
that the Kisubi and Nyamitanga datasets were taken through to that year. The
limitations of these records are various, but two issues are particularly significant. The
most important weakness of the parish registers used in this study is that only 623

9 Buhaya consisted in the colonial period of a number of small kingdoms, of which the best known are
Karagwe, Kiziba and Kiamtwar, whose populations were ethnically almost identical.
10 The Nkole are made up of two sub-groups, the pastoralist Hima, who constituted a small minority of
the total population but were nonetheless politically dominant until the era of decolonization, and the
agriculturalist majority, known to the Hima by the derogatory term, Iru.
dates of death were recorded, compared to over 53,000 dates of birth and 16,000 dates of marriage. With such small numbers of death dates, full family reconstitution and the calculation of demographic rates was impossible. Nonetheless the analysis of over 71,000 life events before 1980 is a substantial contribution African historical demography, and has permitted highly significant changes in age at first marriage and birth intervals to be tracked.

Still, the overall value of these parish datasets depends to a large extent on the question of how representative these Catholic communities were of the populations of Ankole, Buganda and Buhaya as a whole. Christianity is, after all, viewed as one of the key avenues towards the adoption of new attitudes about health and reproduction. To what extent then will a focus on three Catholic sub-populations skew the overall sense of demographic change in this region. The first point to note is that the size of these datasets compensate for many of their inevitable inadequacies. Bukoba, Kisubi and Nyamitanga parishes were geographically very large. Nyamitanga, for example, encompassed most of central Ankole during the colonial period, an area of several thousand square miles. The number of Catholics within these parishes’ total population increased rapidly, such that by the mid-1930s more than five hundred infant baptisms per annum were recorded in the Bukoba register, which would have represented perhaps seven percent of all births in the district each year. The registered population of these three African parishes was equivalent to that of perhaps fifty pre-1801 English parishes. Catholics came to form the majority within these three societies during our period. Socially they formed something of a middle group in Ankole and Buganda where they were better educated and more prosperous than non-Christians but disadvantaged compared to the local Protestant elites. For much of our period missionaries in this region, moreover, frequently complained of the lack of orthodoxy among their parishioners. Converts were repeatedly criticised for their reluctance to marry in church, devotion to polygamy and adherence to other unchristian beliefs and practices. The question of Catholics’ representativeness should perhaps not be overstated.

The value of family reconstitution from parish registers is now widely recognized in African demographic history. The potential of hospital maternity registers as a demographic source, by contrast, has not been fully appreciated. To a large extent this reflects the greater emphasis placed on records management by the church in Africa compared to medical facilities. Certainly the majority of hospitals I visited in the region had no medical records of more than twenty years of age. Mulago hospital in Uganda had a carefully maintained system of destroying all medical records on a five year rotation, simply because of a lack of storage space, and I was unable to obtain pre-1980 records from any hospital in Buhaya. Fortunately mission hospitals had suffered less from cutbacks of funding and support staff during the 1970s and 1980s. In Kampala, Mengo hospital, which was established by the Church Missionary Society in 1897, donated its early colonial medical records to the Mulago Medical Library many decades ago. A number of maternity registers before 1940 survived and are publically available. Just as the Mengo records came to an end, so another Kampala hospital archive began. From 1939 Nsambya hospital, which was set up by the Roman Catholic Franciscan Missionary Sisters for Africa, retained the

maternity records of its general and private wards in an excellent archive. Nsambya became so successful that it was necessary to take a sample of the registers. Combining the Mengo and Nsambya records has produced a run of maternity data lasting from 1919 to 1984, with the records from every fifth year being entered. In rural Buganda, another Franciscan hospital, Nkokonjeru, had kept records dating back to 1955, so the registers from 1955, 1959, 1964, 1969, 1974, 1979 and 1984 were copied. In total the details of around 18,000 births were recorded in these various hospitals.

All the maternity registers noted the outcome of the delivery, the birthweight and sex of the baby, and the parity or gravidity\(^{13}\) of the mother. The richest registers were those of Mengo hospital, which also recorded the outcome of the expectant mothers’ previous births, the survival of their previous children, and whether or not they or their husbands had or had ever had syphilis. The later registers, particularly from Nsambya, were not quite so detailed but the provision of private maternity facilities permitted an analysis of variations in birthweight and outcomes by income group. These maternity records then are potentially extremely important. But the representativeness of these women who gave birth in hospital again must be questioned. Three automatic assumptions are made about them. Either they were women who had a history of miscarriages or difficult or unsuccessful labours. Or they were women who were identified as high-risk and referred to a hospital by an ante-natal clinic because of a problem such as high blood pressure or disproportion. Or these women were inclined towards a medicalized delivery because of their high status, education or closeness to the church. There is some evidence to support the first two assumptions in the early data. The shocking frequency of previous miscarriage, still-birth and neo-natal death, and the high levels of obstructed delivery recorded in the first decades of the registers suggests that the hospital records may over-represent problem cases. Notes on the patient files occasionally refer to such a process of selection. But the social status of most women is difficult to identify, and the records of patients’ religion in the Mengo registers reveal that a large proportion of patients in this Anglican hospital were Catholics, Muslims and believers in indigenous religion.\(^{14}\) Concerns about the representativeness of the deliveries in hospital, though, reduce after the second world war, when the scale of hospital maternity work increased enormously. By the mid-1950s over six hundred women were giving birth each year in Nsambya, which was only one of four major maternity hospitals within Kampala. In Buganda as a whole the proportion of all births which took place in a medical facility rose from approximately twenty-one percent in 1947 to thirty percent in 1958 and forty-one percent in 1967.\(^{15}\)

**The Shift to High Fertility: Timing and Mechanisms**

\(^{13}\) Gravidity is defined as the number of times that a woman has been pregnant.

\(^{14}\) The forenames of patients at Nsambya hospital also indicate that many Protestants and Muslims attended this Catholic institution.

\(^{15}\) Uganda Protectorate, *Annual Report of the Medical Department, 1947* (Entebbe: Government Printer, 1948); Uganda Protectorate, *Annual Report of the Medical Department, 1958* (2 vols., Entebbe, 1959), vol.II; Grech, Galea and Trussell, ‘Maternal’, pp.263-78. The 1947 report estimated that more than a third of all births were in an institution, but this figure was based on registered births. The 1948 census demonstrated that forty percent of births were unregistered. Another universal problem with data on child survival and the outcome of previous pregnancies is that of memory. Demographic researchers have found that women sometimes forget or choose not to mention deaths of young children, still-births and miscarriages, particularly if they occurred some time in the past. Again, it is necessary to expect that the data on parity, gravidity and child death will underestimate the true figures.
While official data are of limited value for the early colonial period, they show clearly that patterns of fertility varied greatly across these three societies, with Ankole enjoying much higher birth rates than the other two societies. The vital registration of births was generally rather unreliable but was considered to be particularly accurate in Buganda. Therefore the finding that Ankole’s crude birth rate was sixty-three percent higher between 1907 and 1924 than that of Buganda suggests strongly that Ganda sub-fertility was not merely a concoction of STD-fixated missionaries. Buhaya’s censuses meanwhile showed no population growth by natural increase until the 1950s, partly, it seems from local surveys, because of very high infant mortality, but also because of a remarkably low Total Fertility Rate of around 3. Chiefs, clergy and colonial officials consistently accepted that the apparent high incidence of syphilis and gonorrhoea constituted a sufficient explanation for Ganda and Haya sub-fertility in the early colonial period. But in the decades that followed medical confidence in the accuracy of STD estimates weakened, given the relative rarity with which serology featured in the diagnostic process, and the remarkable frequency with which false positives were obtained by the tests that were utilized. Doctors began to consider alternative sources of fertility problems, noting for example the exceptionally high frequency of dystocia in Buganda, which was associated primarily with both childhood malnutrition and the almost universal usage of ectopic herbal medications early in labour. STDs no doubt played a significant role in limiting fertility, but the underlying social factors which caused observers to overestimate the frequency of diseases of immorality, the reluctance of some young people to marry and the rise in the incidence of divorce, would of themselves have suppressed overall fertility rates in Buganda and Buhaya.

Marriage in Ankole by contrast appears to have been reinforced in the early colonial period. Chiefs’ efforts to reform sexual behaviour were more efficacious here than in the other two societies, while labour migration, the dominant source of income generation for the population of this district, may not have reduced the average age at which people married, but did greatly increase the proportion of men who were able to marry. As there is no indication that the frequency of polygamy increased during the colonial period, it is reasonable to assume that this was the key factor which caused the the proportion of adult women who had not yet married to halve between the 1911 and 1931 censuses from sixteen to eight percent, at which level it stabilised until the 1970s. Most women who had not yet married were under the age of twenty-five, indicating that marriage had become almost universal. This, combined with improving reproductive health, ensured that by 1948 only two districts in Uganda had a lower level of primary sterility than Ankole.

The family reconstitution data from the three parish registers examined for this study provide little support to the thesis that Africa’s fertility increase mimicked that of industrializing England, where a reduction in marriage age was key. The relative insignificance of marriage age is indicated by the fact that in Ankole, where fertility was highest, women married latest [See Figures 1 and 2]. In Ankole the parish registers indicate that average marriage age for men and, more importantly, for women rose gradually from the 1920s until the 1950s and then stabilised. On average, before 1970 Catholic men married, supposedly for the first time, at 23.7 years of age, women at 21. While Nkole men married about nine months earlier than Ganda and Haya males, Catholic brides in Ankole were around nine and twenty-one months older than their counterparts in Buganda and Buhaya. The broad trend in Kisubi parish in Buganda was for male and female marriage age to rise. Only in Buhaya was there any indication that a reduction in marriage age may have contributed to a rise in fertility. But even here it would be difficult to argue that this change was triggered by economic factors, coming as it did a quarter century after Buhaya’s coffee boom started and continuing despite the sharp decline in prosperity that followed independence.

Figure 1 Mean age at first marriage for males in Bukoba (Buhaya), Kisubi (Buganda) and Nyamitanga (Ankole) Catholic parishes

Figure 2 Mean age at first marriage for females in Bukoba (Buhaya), Kisubi (Buganda) and Nyamitanga (Ankole) Catholic parishes19

The recorded age at marriage in church though should be assumed to be higher than the norm in African societies in this period. Parish data are unlikely to be representative of marriage age more generally. Many who underwent a Christian ceremony did so as a marker of status or aspiration, and are likely to have had their marriages delayed by prolonged education or paid employment. Moreover, it would be optimistic to believe that church authorities were always aware of situations where a couple sought a Catholic wedding simply to add a spiritual blessing to a pre-existing union. Other sources indicate that Christian weddings did indeed occur later than the societal norm. James Ntozi calculated the female singulate mean age at marriage (SMAM) from the 1969 census data to be 18.1 years in Ankole, while a rural survey in 1972 reported that women had on average first married at 16.7 years of age. Perhaps the most important reason for the gap between Christian and non-Christian age at marriage was that the church’s reluctance to allow the marriage of child brides,

19 Only five-year periods when twenty-five or more marriages occurred are included. Marriage ages below twelve and above forty-five are excluded, due to the unlikelihood that individuals would marry for the first time at such ages, and that they would be fertile. Marriage ages were taken from the baptism rather than the marriage registers from these parishes, partly because the former were more likely to identify individuals who should be excluded from the calculations because they were widowed or were seeking a religious blessing for a pre-existing customary marriage. Moreover, individuals were unlikely to state their true ages when marrying if they were very young. Thus only 3.1% of brides in the Kisubi marriage register stated their age at less than sixteen, none less than fourteen. None of the 1,051 husbands in the marriage register were younger than sixteen, only eight younger than 18. But the marriage dates recorded in the notes column of the baptism register indicated that 10.8% of brides and 4.6% of husbands were younger than sixteen. In May 1937 a woman named Namayanja married at Kisubi, her age being recorded as fifteen in the marriage register. Yet by linking the personal details recorded in the marriage and baptism registers we find that she was in fact just over thirteen years old. In March 1925 a woman named Namutebi claimed to be twenty-three when getting married. She was in fact twelve years and three months old.
even if it was not consistently applied, seems to have had some deterrent effect. According to Tanzania’s National Demographic Survey of 1973 32% of older Haya women had married between the ages of eight and fourteen, whereas only 11.2% of Catholic brides married before fifteen, and almost all of these were fourteen. The value of the parish data then is primarily longitudinal and comparative. The church records indicate that marriage age in two of the three societies rose rather than fell over time, and that women married later in Ankole than in the other case study areas.

The reconstruction of family relationships using the baptism and marriage registers of the three Catholic parishes examined for this study also reveal significant changes in patterns of birth spacing, but again the overall importance of birth intervals as a factor determining fertility levels should not be overstated. In Buhaya for example that fact that the pace of reproduction was slower than in both Ankole and Buganda undoubtedly did contribute to the low fertility of the Haya during the colonial period. Bukoba parish records indicate that the average birth interval during the colonial period was 31.5 months, more than one and a half months longer than in Nyamitanga and Kisubi (see Figure 3). Average intervals, moreover, peaked higher and later than in the other two societies, reaching 33.7 months in the late 1930s. These data came as no surprise for birthspacing was a topic of greater importance for informants in Buhaya than elsewhere, with Haya women repeatedly stressing the dangers associated with falling pregnant too quickly after a previous delivery. Female informants were unusually concerned about the physical strain placed on their bodies by pregnancy, childbirth and breastfeeding. But even more emphasis was placed on the threat posed to the suckling child by its mother conceiving again, a situation referred to in Buhaya as ‘child-strangling’. The early cessation of breastfeeding by pregnant mothers was regarded with great anxiety, being associated with infant malnutrition. A few informants reported that such ill-timed pregnancies might be aborted, others employed prolonged abstinence to ensure long birth intervals, but much more common was the use of herbal medicines that were believed at the time to have a contraceptive effect. Haya women retained faith for longer in the contraceptive effect of prolonged lactation than did women in the other societies. Elderly informants reported that the Haya ideal was to breastfeed for three years, though in practice none had lasted more than thirty months. Still, the minimum reported length of breastfeeding was nine months, and a year and a half was the most common period cited. Ten to twelve months was the norm in late colonial Ankole and Buganda. Perhaps more importantly, Haya women knew that breastfeeding had the greatest negative impact on fecundity when it was babies’ exclusive source of nutrition. It was

---

22 So few families had large numbers of children that any cohort effect in changing birth intervals is impossible to identify with confidence.
striking how many women claimed that they had only started to wean their children at the age of eight, ten or twelve months.23

Figure 3 Average birth intervals in months for the Catholic parishes of Bukoba (Buhaya), Kisubi (Buganda), and Nyamitanga ( Ankole)24

Buhaya’s relatively long birth intervals must have contributed to the district’s low fertility, but only to a minor degree. One informant who reported that she had produced a baby every two and a half years ended up with nine live births.25 Her births spacing was typical, but her family size was not, for Haya interviewees were characterised above all by their sub-fertility. Answers to the question: ‘How many live births were considered to be many in the past?’, were particularly revealing. Five was thought by most to be ‘impossible’. Four was described as ‘extraordinary’ or ‘the maximum, and the woman would have to be a witch’. Someone with two children ‘was a man, a boss’. ‘He would be so proud.’ A number of informants’ names reflected this struggle to have children. One, an only child like so many others, was called Mukamutachumwa, indicating that she would be both son and daughter to her parents.26 Only a handful of female informants had more than three children. Many more were childless.

From the 1950s Haya fertility patterns were transformed. The Total Fertility Rate, which had been estimated in 1952 at 3, had by the 1967 census reached 7.2, which must be one of the fastest increases in fertility in recorded history. By the start of this century Buhaya, once a synonym for sub-fertility, had Tanzania’s second-highest fertility rates.27 Two related developments in the 1950s were of fundamental importance in causing the rise in birth rates. The first was a remarkable improvement


24 Source: Bukoba, Kisubi and Nyamitanga Catholic parish baptism registers. Birth intervals were only calculated when both births were dated to an accuracy of at least a month. Birth intervals of less than nine and more than sixty months were excluded. The graphs display only those five-year periods with more than fifty birth intervals. No data were available for Bukoba after independence.

25 Int. Eugenia Kolushuso, Kanyangereko Nkimbo, Aug. 2000, 2, F.


in reproductive health due to an unusually effective, coordinated campaign to reduce STD prevalence, expand maternity services and improve nutritional standards and primary healthcare. Doctors working at Bukoba district hospital in the early 1950s reported that the Haya suffered more destructive gynaecological sequelae of gonococcal infection than any other people amongst whom they had ever worked.28 The subsequent STD programme was remarkable for the intensity with which public health messages were delivered and the universality of treatment. It also triggered a wider expansion of medical services which for example meant that by 1959 Buhaya’s many mother and baby clinics were so overwhelmed that the district medical officer had to propose that fees should be introduced ‘to discourage mothers not in need of institutional care’. Haya women too in the early 1950s were remarkable for their low mean BMI, and the range of foods which they were forbidden for ritual reasons. Health propaganda, a rapid expansion of female education, and growing prosperity brought about a dramatic improvement in maternal diets. Treatment for common ailments such as malaria and worms, implicated in pregnancy loss, also became much more widely available in rural areas.29

Buhaya’s population growth was due above all to a decline in the prevalence of sterility. According to the 1973 NDS 10.3% of women in their thirties and 15.1% of those in their forties had never had a child. The levels of primary sterility recorded in this survey were therefore around twenty percent lower than those reported by the EAMS in the early 1950s, and forty-two percent lower than those observed in 1938. Much more significant was the decline in secondary sterility. In 1973 the proportion of ever-pregnant women in their twenties who had not conceived in the past five years was eight percent, while for women in their thirties the proportion was thirty-six percent. The equivalent rates in the early 1950s were fifty-one and eighty-eight percent.30

The second factor which underlaid Buhaya’s fertility transformation was related to the first: a rapid reduction in the frequency of divorce, which meant that most women remained in a stable relationship for most of their reproductive lives. In a 1954 survey, only 50.6% of ever married women in their twenties were still with their first husbands. For women in their thirties the proportion was still lower, at 41.1%. Three-quarters of marriages that had ended had done so due to divorce. Not only was divorce extremely common, but remarriage was far from automatic. Fifty-eight percent of divorcees had not remarried at the time of this survey. The 1973 NDS by contrast found that ever married women in their twenties were less than half as likely to be divorced, and women in their thirties were fifty percent more likely to be still married to their first husband. Moreover, the proportion of women of reproductive age who were widows fell over the same period from eight to five percent, presumably due to declining adult mortality. It is highly likely that the proportion of couples who remained alive and together until the wife reached the age of menopause increased substantially after 1955.31 What was crucial here then was the

30 Henin, National Demographic Survey, Vol.1, pp.215-38, Vol. 3, pp.1-134, and Vol. 6, p.75; U. Larsen, ‘Childlessness, subfertility, and infertility in Tanzania’, Studies in Family Planning, 27, 1 (1996), pp.20-7. The EAMS had used eight rather than five years as the measure of subsequent sterility, but the change is unlikely to have affected the results significantly.
decline in primary and secondary sterility, due to improved reproductive health and marital stability. The key proximate determinants of high fertility were those that influenced the duration not the inception or pace of reproduction.

The same was true in Ankole. As we have seen, age at first marriage was not particularly low here. Nor did birth spacing decline especially early or rapidly. The parish registers from Nyamitanga, which lies on the outskirts of the district capital of Mbarara, show that the average gap between each birth lengthened through the early colonial period, probably due to deepening anxiety about child mortality, until it peaked in the early 1930s at 32.3 months. Birth intervals then fell steadily to around 28.6 months in the late 1950s, a level at which they remained until the end of the 1960s. This was a major but not exceptional change, one that meant that the number of children born to the average women, if she gave birth at a constant rate over her reproductive life, would have increased by perhaps twelve percent during the second half of the colonial period. Comparing the reconstitution results from Buganda and Ankole, it is clear that after 1930 Ganda women reproduced faster than women in Nyamitanga. Yet we know that Nkole women had much higher fertility during this period. The reconstitutions help to resolve this apparent problem. They show that the average number of children baptised per family in Nyamitanga exceeded that in the Buganda and Buhaya parishes by forty-two percent, with the biggest increase occurring between 1910 and 1924 (see Figure 4). Moreover, the proportion of women in each parish who had baptised five or more children was, at 15.2%, 2.3 times higher in Ankole than Buganda and Buhaya (see Figure 5). In other words, as an explanation of Ankole’s high fertility, the longevity of women’s reproductive lives within marriage was much more important than the rapidity with which they gave birth. The greater duration of Nkole women’s reproductive lives is explained not by their having started earlier than their neighbours, but from their having been able to have children over a longer period once they started.

Figure 4 Mean number of children ever baptised per woman in the Catholic parishes of Bukoba (Buhaya), Kisubi (Buganda), and Nyamitanga ( Ankole)

Figure 5 Percentage of mothers with five or more baptised children in the Catholic parishes of Bukoba (Buhaya), Kisubi (Buganda), and Nyamitanga (Ankole)

32 Birth intervals of less than nine and more than sixty months were excluded, as were those where one of the children’s dates of birth did not specify at least the month in which the birth occurred. These figures tally well with the average birth interval of 30.5 months which was recorded in 1972 by the Ankole Demographic Research Project. The 1972 figure was calculated from reproductive histories obtained from a large sample of women aged between fifteen and forty-nine. Some of the birth intervals included in this average figure therefore would have dated from the late 1930s. Costello, ‘Maternal’, p.161. The 1972 total is likely to have been inflated due to informants’ forgetting some pregnancies which did not result in a living child. Equally the parish reconstitution data would have exaggerated true birth intervals, while the total number of children baptised grossly underestimated true fertility levels. As noted above, many babies would have died before being baptised, given the size of these parishes; couples often would have been lost to observation in the middle of their reproductive lives due to permanent or temporary migration or the creation of daughter parishes; and, given the inaccuracy of missionary recording of personal names, reconstitution was far from complete.

33 These data will underestimate the true family size in these parishes. Not all baptised children had a legible date of birth, it is likely that some parents’ names were misspelt, many families would have had some children outside the parish due to migration, and few babies who died soon after birth would have been baptised. Therefore family reconstitution would have been incomplete.
The story of fertility change in Buganda differs from that in its neighbours to the west and south. Ankole was representative of Africa’s higher fertility cultures such as Kikuyuland, where birth rates already seem to have been reasonably high before the second world war due it seems to pro-natalism and reasonable standards of health. Buhaya’s experience by contrast was typical of those societies such as Bunyoro in western Uganda where fertility levels remained unchanged or even declined until the end of the colonial period before undergoing a remarkable and sustained increase in the second half of the twentieth century.34 Buganda was much more unusual. Here fertility levels seem to have increased modestly between the 1920s and 1940s before rising rapidly from the 1950s.

Age at first marriage rose slightly before the 1950s, while levels of sterility and stillbirth remained largely unchanged according to survey and medical records. Yet it is likely that overall fertility rose gradually between the 1920s and 1940s because, according to the Kisubi parish registers, Ganda birth spacing fell rapidly from 1920, so that from 1930 birth intervals here were lower than in Ankole and Buhaya, a situation that would continue until the end of our period (see Figure 3).35 The fall in birth intervals in Kisubi, from 32.5 months in 1920-24 to 30.5 months in 1935-9, seems to have been triggered by a reduction in the expected duration of breastfeeding to around two years, rather than the three and a half of the pre-colonial period.36 Ganda may have responded to missionaries’ preaching against prolonged breastfeeding which was associated, they believed, with male infidelity. More importantly, Ganda mothers may have been more willing to consider shortening their birth intervals in the mid-colonial period than their Nkole and Haya counterparts because child survival rates improved in this especially favoured society unusually early. Mengo hospital records indicate that the level of previous child mortality experienced by expectant mothers almost halved between 1924 and 1939. It is likely that child survival would also have improved around Kisubi, which possessed its own mission hospital, and was equidistant between the larger institutions of Kampala and Entebbe. The need to delay conception for as long as possible lessened after 1924.37

The pace of reproduction quickened early in Buganda, but overall fertility levels remained low until the 1950s, when they seem to have increased rapidly. Buganda’s crude birth rate (CBR) was 30 per 1,000 at the 1948 census, a very low level by post-war African standards, but 36 in 1959. Buganda’s CBR however was

---


35 Richards and Reining, ‘Report on fertility surveys, 1952’; Uganda Protectorate, Annual Medical Reports 1925-48, NA, CO/685; Uganda, ‘1948 Sample Census’; Uganda, *1931 Census*; Mengo Hospital Maternity Registers; Kisubi Parish Registers. The later vital registration figures relating to stillbirth were substantially lower than rates from hospital deliveries, but that is perhaps unsurprising given that many women gave birth in hospital due to difficulties in childbirth.


always unnaturally depressed due to the large numbers of male immigrants living
alone, and it was not until 1959 that a more useful fertility measure, the Total Fertility
Rate (TFR) became available. The TFR was 4.9 in that year and 5.3 in 1969. Hospital
parity data compensate for some of the limitations of Uganda’s colonial censuses.
Nsambya’s maternity registers show that the average parity of new Ganda mothers
increased sharply from 2.3 in 1949 to 2.7 in 1959 and 4.1 a decade later. Examining
the changing parity profile of women giving birth is a more sensitive marker of major
shifts in fertility trends than the overall average of previous live births. The proportion
of women who were either first-time mothers or grandmultiparae, ie women with five
or more births, declined sharply between 1949 and 1954, due to a surge in the
numbers of parity 2, 3 and 4 mothers. In 1959 parity 2 women exceeded the numbers
of first-time mothers for the first time. By 1964 the relative prominence of both parity
1 and 2 had fallen, as high parity among older women became well established, so
that by 1969 there were twice as many grandmultiparae as there were first-time
mothers. The building of demographic momentum is illustrated well by Figures 6 and 7.

Figure 6 Average parity of Ganda mothers who delivered in Mengo and Nsambya
Hospitals, Kampala, 1919-1979

Figure 7 Percentage of mothers by parity, Mengo and Nsambya Hospitals, Kampala,
1919-1979

As in Buhaya Buganda’s rapid increase in fertility rates from the 1950s was in
large part driven by a reduction in primary and secondary infertility. Primary sterility
rates fell substantially among women in their late forties in Buganda from 25.1% in
1948 to 18.4% in 1969.38 In addition the proportion of women whose reproductive
lives were cut short also reduced. The 1959 census found that female fertility levels
fell off rapidly over the age of thirty-four. By 1969 this was no longer so, as the age
specific fertility rate for 35-39 year olds had risen by sixty-four percent over the
intervening decade. This cohort of women born between 1930 and 1934 had not been
characterised by noticeably high fertility at the time of the 1959 census. What had
happened was that the longevity more than the pace of women’s reproductive lives
had increased in the late 1950s and through to the 1960s.39 Part of this elongation of
the period of childbearing seems to have been due to social rather than biological
changes. Marital instability had dampened female fertility levels to some extent into
the 1950s, even though women were more willing to have children outside marriage
in Buganda than in neighbouring societies. A survey of married women with children
in that decade found that those who had previously divorced had had significantly
fewer live births than women who had remained with their first husbands. By the
1960s, by contrast, in Kampala at least, women who were currently unmarried
constituted almost half of all mothers delivering at hospital, and were no longer

---

Census* (Entebbe: Ministry of Planning and Economic Development, 1971); Richards and Reining,
papers, LSE, 16/48.
Uganda for period 1959-1969’ (unpublished PhD, University of London, 1980), p.89; Ntozi and
Kabera, ‘Patterns’, p.96.
characterised by sub-fertility. As only twelve percent of ever-married women in Buganda were divorcees in 1969, it is to be assumed that most of the women in this survey had never married. The link between marriage and reproduction had been fundamentally weakened.40

It is possible that more important causes of the reduction in sub-fertility in Buganda were associated with improvements in medical care, given the exceptional quality and quantity of curative, preventive and maternity provision in this society. The early expansion of ante-natal and maternity services reduced the incidence of unattended difficult deliveries, lowering the risk of sterility consequent on post-partum infections. Similarly, the large number of medical facilities in Buganda ensured that treatment with penicillin for STDs was accessible to the entire population more quickly than was the norm in East Africa. Gonorrhoea still affected the fertility of a significant number of women in the 1960s, but syphilis no longer seems to have been a major cause of miscarriage and stillbirth.41

Few areas in tropical Africa can match the level of detail which exists in Buganda regarding the impact of medical care on reproductive outcomes. Records of changing birthweight over time give a clear sense of how the nutritional status and disease burden of pregnant women improved significantly between 1924 and 1969. As Figures 8 and 9 show, at the start of this period the average birthweight of hospital-born babies in Kampala was 2,785 grams, with 27.9% weighing below 2,500 grams and therefore being classified as low birthweight, a condition which is strongly associated with a higher risk of stillbirth. By 1937 the average had climbed to 3,063 grams with only 10.6% being classed as low birthweight, levels which remained largely stable until the 1960s when the average rose by another hundred grams, and the proportion of low birthweight babies fell to around 5%. Researchers found that low birthweight in Kampala was associated with poor diet, malarial infection, poverty and illiteracy. Its reduction over time was a function not only of broad improvements in income and the availability of high-value foodstuffs, but also reflected decades of sustained nutritional propaganda and a highly successful attempt to eradicate mosquito breeding sites in urban and peri-urban Kampala.42

Figure 8 Average birthweight of babies born in Mengo and Nsambya Hospitals, Kampala, 1919-84

Other medical interventions had a more immediate effect on pregnancy outcomes. The Mengo hospital records show that between 1924 and 1939 the proportion of maternity cases whose pregnancies ended in miscarriage fell significantly from 9.3% to 5.2%, whereas the experience of previous miscarriage remained unchanged. This suggests that improved ante-natal care had an immediate beneficial impact on the likelihood of seeing a pregnancy through to term. The frequency of previous miscarriage, as reported by Mengo patients, subsequently fell by two-thirds between 1940 and 1955, as ante-natal care became ever more common and the incidence of undernutrition, syphilis and malaria reduced. Levels of stillbirth in mission hospitals meanwhile remained stable until the 1950s when they experienced a remarkable improvement. The proportion of babies that were stillborn averaged 13.1% before 1950 and 3.4% in the 1950s and 1960s. Maternal mortality fell just as fast.

The most important cause of maternal death and stillbirth before the 1950s, in hospital at least, was disproportion. Women experiencing obstructed delivery at home were commonly dosed with oxytocic herbs, increasing the likelihood of maternal exhaustion and uterine rupture, which occurred more frequently in Buganda than anywhere else in the world. Shock, haemorrhage and infection were frequently followed by death. Surgical interventions between the wars were notable for their lack of success. Babies stillborn due to cranial injury consequent on the use of forceps appeared in the registers with depressing regularity. Anatomical measurements in the early colonial period found that 18% of maternity patients had a contracted pelvis, and that while the Ganda pelvic outlet was 14.3% smaller than that of women in England and Wales, the average foetal skull was only 5.2% smaller. In the 1930s the crisis reached its peak, as the improved diet and health of small-framed women resulted in a sharp increase in birthweights, and therefore in the size of babies’ skulls. By the 1960s an obstetrician working at Mulago found that although the average Ganda pelvis was still the smallest ever recorded, it was 14% bigger than it had been in the early twentieth century. Better nutrition in utero had been sustained through to

43 Mengo Hospital Maternity Registers, Sir Albert Cook Library, Mulago, Kampala; Nsambya Hospital Maternity Registers. Babies who were identified as premature were excluded from the birthweight calculations.
44 Mengo Hospital Maternity Records. It is surprising that levels of miscarriage experienced by Mengo’s patients did decline, given that the hospital routinely provided women attending ante-natal sessions with a mercury solution which they were advised to drink throughout their pregnancies as a treatment for syphilis. Mercury is now known to increase the risk of miscarriage. M. Tuck, ‘Syphilis, sexuality, and social control: a history of venereal disease in colonial Uganda’ (unpublished PhD dissertation, Northwestern University, 1997), p.285; P. Goering et al., ‘Toxicity assessment of mercury vapor from dental amalgams’, *Fundamental and Applied Toxicology*, 19, (1992), pp.319-29.
adulthood. The frequency of disproportion reduced from the 1950s, but just as importantly the medical response to the problem improved drastically. Women of small stature were automatically identified during ante-natal checks as requiring assisted delivery, while the introduction of the lower segment caesarean section in the 1950s, and vacuum extraction in the 1960s, dramatically reduced the risk that disproportion would end with maternal death and stillbirth. The increased duration of women’s reproductive lives after 1950 was in part due simply to a radical reduction in the risk of death during childbirth.

Improved healthcare impacted on fertility levels after 1940 in one other major area, birth spacing. Average birth intervals, according to the Kisubi parish baptism registers, declined by four and half months between 1940 and 1969. The enormous improvement in the chances of child survival, which had begun between the wars and accelerated after 1945, was likely to have affected maternal decision-making about breastfeeding strategy, though other factors also encouraged bottle-feeding and early weaning. The concentration of wealth, industry and social services in Buganda meant that female education and employment were far more advanced here than elsewhere in the region. In 1959 thirty-four percent of females aged five and over had some schooling, twice the national average. By 1969 Buganda’s female education rate had risen to forty-seven percent, and in some areas more girls than boys were in school. Schooling helped give women the confidence to reject pressure to maintain traditional breastfeeding practices, while the requirements of the workplace provided the impetus for many to do so. The sharpest fall in birth intervals, of 2.8 months, came in the early 1950s, coinciding not only with the dramatic improvement in health services, but also with the rapid take-up of bottle feeding, especially in the area around Kampala, where by 1960 forty-two percent of Ganda babies were bottle-fed. Surveys of women in the 1950s who attended child welfare clinics, and therefore lived primarily in urban or peri-urban areas, found that the typical period of breastfeeding had halved in the recent past to around twelve months, with literate women stopping four months earlier

---

46 C. Rendle-Short, ‘Rupture of the gravid uterus in Uganda’, Obstetrics and Gynecology, 79, 6 (1960), pp.1114-20; Mengo Hospital Maternity Records; Report of the Lady Coryndon Maternity Training School, Namirembe, 1932 (Albert Cook Archive); D. Albrook ‘Some problems associated with pelvic form and size in the Ganda of East Africa’, The Journal of the Royal Anthropological Institute of Great Britain and Ireland, 92, 1 (1962), pp.103-13. The use of oxytocics was associated with a fourfold increase in the incidence of stillbirth and raised the likelihood of maternal death by 250%. Much of the increased risk derived from underlying problems of disproportion or malpresentation which often caused oxytocics to be given. Interestingly, some informants stated that during the colonial period Ganda started to discourage pregnant women from eating carbohydrates in order to limit foetal growth and reduce the risk of disproportion. Female FGD, Takajunge, 26 Aug. 2004.


than those who had not been to school. Interviewees, most of whom raised families in rural Buganda in the middle decades of the twentieth century, breastfed their babies for slightly longer than the urban rates, but very few lasted longer than eighteen months.

It might have been assumed that Buganda’s high levels of female education after the second world war would have delayed the onset of reproduction. In fact there is little evidence of that before the late 1960s. Successive censuses showed that women started their reproductive lives earlier in Buganda than in Uganda as a whole. Interestingly, the 1959 census showed that women in Kyaddondo – Kampala and its hinterland – enjoyed significantly higher levels of fertility than the rest of Buganda until age thirty, reinforcing the sense that high levels of education and healthcare, initially at least, increased birth rates. By contrast, average female marriage age, according to the Kisubi registers, rose by two and half years between 1945 and 1969, though it still remained lower than in Ankole. Education and employment seem to have had more impact in causing women to defer marriage than to delay the onset of sexual activity. This was seen most clearly in the area around Kampala, where retrospective reproductive histories found that in the late 1960s the average age at first birth, 18.7, was 1.3 years lower than the age at first marriage. Fertility rose in Buganda then partly because of the increased duration of women’s reproductive lives, partly because they reproduced more quickly, and partly because of their improved health.

Conclusion

Previous attempts to explain the origins of rapid population growth in Africa have been hampered by the weakness of fertility data for the period before the second world war. In this region, however, the early development of complex bureaucracies, missions and hospitals ensured that sufficient information about the key life events of local people was recorded and archived to enable some changes in fertility patterns to be traced and explained. The most significant finding of this research is that fertility increase does seem to have begun before the second world war, in Ankole and, less clearly, in Buganda. The 1950s saw birth rates begin to rise in Buhaya, and increase much more rapidly in the former two societies.

In few aspects of modern African history must the establishment of the chronology of change still take centre stage, but this is one. Just as important as identifying when fertility increased in these three societies is explaining how and why it did so. In none of the case study areas did a reduction in age at first marriage enable women to have significantly larger families. In Ankole what was significant was how the intensely pro-natalist culture that characterised Ankole’s agriculturalist majority at

---

the start of the twentieth century survived largely intact through to independence, while in addition the proportion of women in Ankole who were married increased in the 1920s, from which point marriage remained almost universal and exceptionally durable. Buhaya’s increased fertility from the 1950s was also associated with a changing marriage pattern, in this case caused by a dramatic decline in the incidence of divorce, whereas in Buganda it was the increasing willingness of women to have children outside marriage that proved significant.

In all three societies the most important cause of higher fertility was an increase in the duration of women’s reproductive lives, partly due to changes associated with marriage but, more importantly, consequent on improvements in women’s health. Better maternal nutrition was a significant factor in Buganda from the interwar period and in Buhaya from the 1950s. After the second world war penicillin limited the impact of STDs and post-partum infections on female fecundity across the region. Improved healthcare also reduced the prevalence of primary infertility, as did schooling and missionary criticism which reduced the frequency with which girls suffered reproductive damage consequent on premature marriage. Pregnancy outcomes improved most dramatically in Buganda, it seems, where the exceptional quality of maternity provision brought about a remarkable reduction in the frequency of miscarriage, stillbirth and maternal mortality, though Ankole and Buhaya also benefited to a lesser degree.

The final factor which was of major importance was the reduction in the length of birth intervals, which began in Buganda in the 1920s, in Ankole in the 1930s and Buhaya in the 1940s. The decline in birth spacing was the result of improved maternal health and nutrition, and the shortening of the period of breastfeeding, due to female education and employment, and greater parental confidence in the likelihood of child survival.

For African historical demography as a whole, the significance of these case studies is above all that some factors which have frequently been assumed to have been of primary importance in stimulating higher fertility in the colonial period were largely irrelevant in each of these three societies. Moreover, the example of Buganda in particular demonstrates that it is dangerous to think of a smooth transition to a high fertility regime, for birth intervals declined extremely early here but the impact of this reduction in birth spacing was largely cancelled out for several decades due to the severity of marital instability and reproductive health problems in this kingdom. More specifically, southern Uganda and northwest Tanzania have been considered by some scholars to belong to the band of sub-fertility that stretched across much of equatorial Africa, encompassing much of southern Sudan, Central African Republic, both Congos, Cameroon and Gabon. Previous reviews have tended to identify STDs, often associated with prolonged post-partum abstinence, labour migration or social disruption arising from the colonial takeover, as the pre-eminent cause of this enduring pattern of low fertility. STDs were also important in Buganda and Buhaya, though they were due more to commercialisation than migration and abstinence. But these case studies indicate that other health problems as well as marital breakdown contributed significantly to the sub-fertility of the Ganda and Haya. It seems likely that future research will add further complexity to our understanding of Africa’s distinctive regional demographic histories.53