

# A future with fewer children: Past and projected trends in the South African fertility transition

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## 1 INTRODUCTION

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They said I should  
Learn to speak a little bit of English  
Maybe practise birth control  
Keep away from controversial politics...

(Johnny Clegg and Savuka, "Third World Child")

Apartheid, in all its manifestations, impinged on every aspect of the daily lives of African South Africans. Racial segregation, job reservation, restrictions on mobility, inferior education and health care provision were just some of the more obvious aspects of that system. However, recent histories have argued persuasively that apartheid was not a singular, coherent and hegemonic ideology, but an amalgam of policies forged out of conflict and compromise within the white ruling classes. Consequently, serious internal contradictions existed between different policy arenas.

In the demographic realm, contradictions emerged between the desire to reduce African fertility (driven by a fear of White South Africans being "swamped"), and government policies that ensured that Africans (and African women, particularly) were systematically denied access to education, health care and urban residence, all factors that are conducive to fertility change.

Furthermore, government concerns about security and secrecy meant that very little substantial research into demographic questions was published between 1960 and 1990, and hence very little is known about the historical dynamics of the South African fertility transition.

The purpose of the paper is threefold. The first is to redress the paucity of current and historical demographic evidence relating to the trajectory of the South African fertility decline since 1960. Section 2 presents robust estimates of fertility levels and the length of median birth intervals between 1960 and 1998, and outlines possible associations with and causes of the changes in fertility and birth intervals identified over this period. Second, the paper describes a possible scenario for the future trend in South African fertility. It concludes with some reflections on the implications of the patterns and trends of South African fertility both on mothers, as well as on the future labour force of South Africa. Hence, this paper looks at past and future trends in South African fertility. These trends are important for three reasons: to understand the genesis of, and the forces impelling, patterns of female labour force participation; second, to locate women's childbearing strategies in their social, economic and institutional contexts; and third – through investigating the future patterns (and projected absolute numbers)

of childbearing and childbirths – to identify potential bottlenecks and labour supply issues several years in advance.

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## 2 TRENDS IN SOUTH AFRICAN FERTILITY AND BIRTH INTERVALS

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An appreciation of the dynamics of the South African fertility decline over the second half of the twentieth century is essential in assessing the trends in the past and potential future patterns of the changing demography of South Africa. Section 2.1 describes the data used; 2.2 provides estimates of the level of fertility in 1996 by province and population group as well as giving some insight into past trends in South African fertility. Section 2.3 looks specifically at trends in birth intervals and childspacing among African South Africans in the period 1960-98.

### 2.1 Data

The data used in these investigations are the 1970 and 1996 South African censuses; the results from a survey conducted on behalf of the South African government between 1987 and 1989, using a questionnaire very similar to that used in the early rounds of the Demographic and Health Surveys; and data from the 1998 South Africa Demographic and Health Survey (DHS).

#### 2.1.1 *The 1996 census*

The 1996 census was the first conducted after the political transition in April 1994. While the census coverage was generally good, severe deficiencies were manifest in the quality of the fertility data collected. In addition to the normally-encountered errors associated with women of zero parity being enumerated as “parity not stated”, a significant proportion of women gave their total number of children ever borne in response to the question on recent fertility. Furthermore, confusing wording led to the inclusion of stillbirths among women’s total children ever borne. The necessary adjustments made to the census data are described in detail in a Technical Report prepared for the South African Medical Research Council (Moultrie and Timæus, 2002).

#### 2.1.2 *The 1998 DHS*

The aims of the 1998 South Africa DHS were very different from those of the census. While the census aimed to provide a complete enumeration of the South African population (and its main characteristics) in October 1996, the purpose of the DHS was to collect detailed data on demographic and health variables within the country to assist policy making in the health sector (Department of Health, 1999b).

A detailed investigation (Moultrie and Timæus, 2002) into the comparability of these two sources of data showed that the data collected in the 1998 DHS are generally consistent with those from the 1996 census, although women surveyed for the DHS tended to be better educated

and more urbanised than the census showed. In addition, there was some misreporting of age in the DHS, particularly among rural African women aged 40-44 who reported their ages as being between 35 and 39.

### *2.1.3 The 1970 census*

Of all the censuses conducted between 1970 and 1996, only the 1970 census captured data on the entire population of South Africa. Other censuses conducted in the intervening period excluded those homelands granted “independence” by the successive apartheid-era governments.

The quality of the 1970 census data for Africans is not nearly as good as those in the 1996 census. Strong digit-preference was apparent in the reporting of ages. Noticeable troughs exist in the reported population at age 1 for both sexes, as well as a clear dearth of male infants.

Furthermore, the data are limited in their suitability for most research on fertility since key variables (number of children ever borne, and children born in the twelve months before the census) are no longer available.

Despite these deficiencies, the 1970 census data provide the best demographic data on the South African population prior to the 1987-9 South Africa “DHS”, and allow the derivation of estimates of South African fertility for earlier dates than is possible using only the 1996 census and 1998 DHS data.

### *2.1.4 The 1987-9 “DHS”*

Between 1987 and 1989, the Human Sciences Research Council (HSRC) conducted a demographic survey using a questionnaire very similar to that used in the early rounds of the Demographic Health Surveys. However, because of international sanctions and an academic boycott of the country, this survey was not conducted under the auspices of USAID nor with the assistance of Macro International. It does therefore, suffer from a lack of comparability with other survey data in certain key areas.

While the survey was conducted nationally, and included the “independent” homelands, the selection criteria used to sample women were restrictive. Only women who had ever been married (legally or otherwise) or women who had had a child were deemed eligible, thereby biasing the findings towards younger women who had had a child, and older married women. The methodologies and deficiencies of this survey have been examined and investigated thoroughly by Kaufman (1996, 1997), as well as by Mostert (1990). Nevertheless, as has been shown by Moultrie (2002), these data are of good quality, at least in respect of the fertility data collected in that survey.

## 2.2 Current and past fertility in South Africa

Based on analyses of the 1998 South Africa DHS and the corrected 1996 census data, total fertility among all South African women was approximately 3.2 children per woman (Table 2.1). Fertility estimates based on the 1998 DHS data are somewhat lower, suggesting a level of fertility of around 2.9 children per woman. This lower estimate can be attributed to differences in the enumerated and sampled populations, as mentioned above.

**Table 2.1 Estimated total fertility rates for South African women in 1996, by population group**

<i>Population group</i>	<i>Adjusted 1996 census</i>	<i>1998 DHS</i>
African	3.49	3.11
Coloured	2.64	2.53
Indian/Asian	2.45	1.80
White	2.02	1.88
TOTAL	3.23	2.89

Source: Moultrie and Timæus (2002)

Estimates of past fertility from the mid-1950s through to the mid-1990s can be derived from the application of reverse-survival techniques to the 1970 and 1996 South Africa census data for all South Africans combined and for African South Africans separately (Bogue, 1993). Data for other population groups is too sparse to permit reliable estimation of past fertility using this approach. The absence of reliable census data for South Africa between 1970 and 1996 creates a gap in our knowledge relating to the period 1970-1981. However, linear interpolation between the two series allows some tentative conclusions to be drawn and enhances our understanding of the trend in South African fertility over the 50 years since 1948<sup>1</sup>.

The deficiencies of the data and the limitations of the methodologies applied notwithstanding, Figure 2.2 indicates that – especially for more recent periods – the resulting estimates of past South African fertility are generally consistent with those of other demographers. The estimates derived for the 1950s and 1960s are indeed rough approximations as the variability in fertility estimates from one year to the next indicates. The very low levels of fertility estimated for 1968 and 1969 reflect the underenumeration of children under the age of 2 (a common feature in South African censuses), while the pattern in the later years of the 1950s shows strong digit preference in the reporting of children's ages.

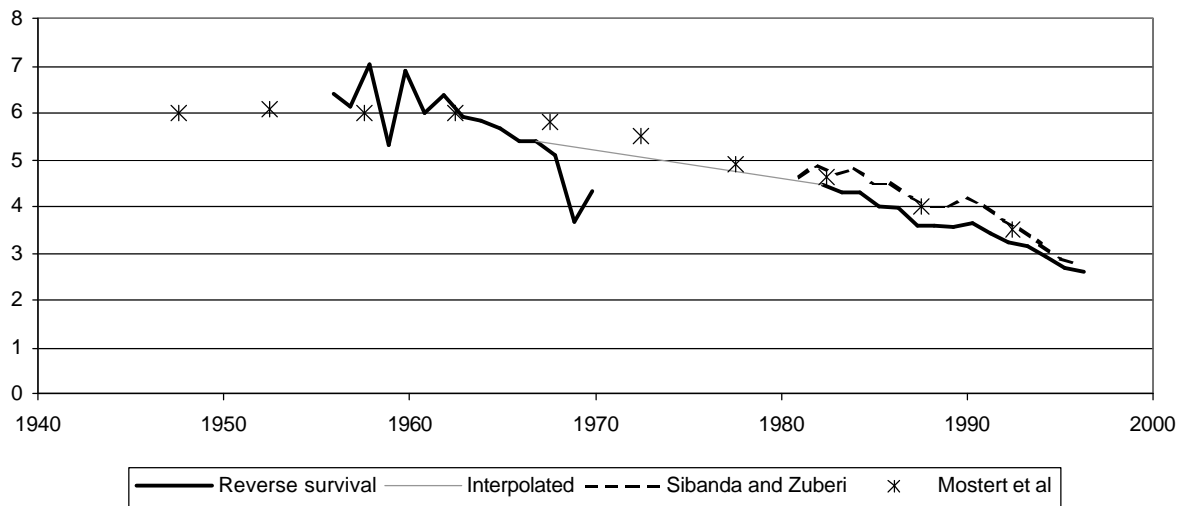
Although the pattern shown by the application of reverse-survival methods is broadly similar to those shown by other researchers, some features are worthy of additional comment. First, the estimates are lower than those produced by Sibanda and Zuberi (1999), especially for the period 1982 to 1994. This difference is most probably attributable to their inadvertent linking

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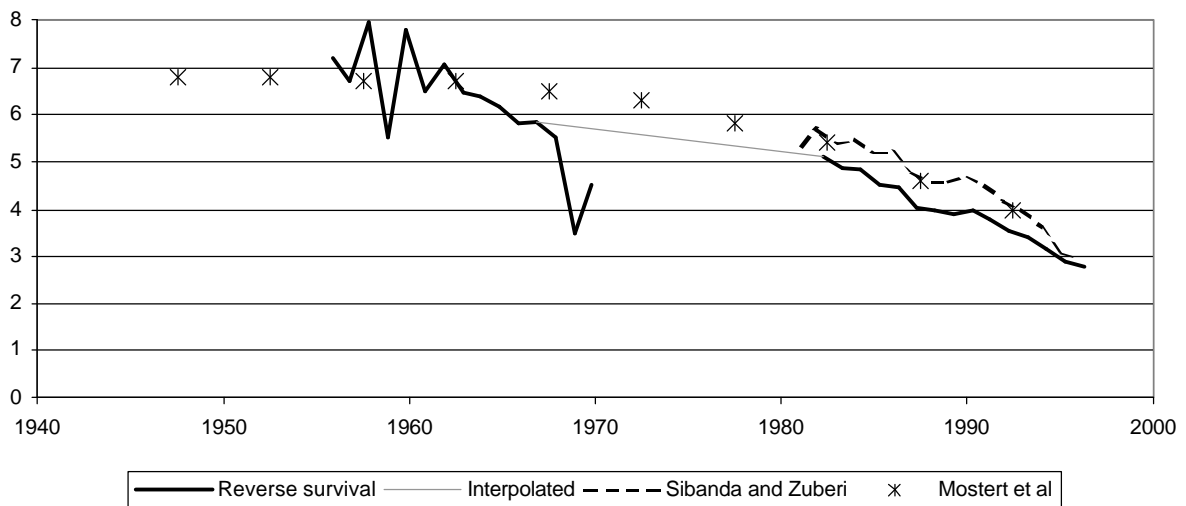
<sup>1</sup> To avoid errors associated with misreporting of infants' age, and under-enumeration at the youngest ages, the interpolation uses the values for 1966 and 1983.

of children to their grandmothers (not their mothers), and hence inflating estimates of fertility among older women. Second, reverse-survival techniques produce estimates of recent fertility that are substantially lower than those indicated in Table 2.1. Dividing the estimate of total fertility in 1996 derived from the current fertility data in the census by that from the reverse-survival procedure suggests that the undercount of African infants (aged less than one) in the 1996 South Africa Census was 26.6 percent.

**Figure 2.1 Trends in total fertility, South African women, 1948-1996**



**Figure 2.2 Trends in total fertility, African South African women, 1948-1996**



Source: 1996 census; 1970 census; Mostert, Hofmeyr, Oosthuizen *et al.* (1998); Sibanda and Zuberi (1999)

Most importantly, the estimates indicate that South African fertility has been in decline since the late 1960s. However, despite the passing of more than thirty years since the start of the South African fertility decline, fertility among African women has yet to halve. Many other

developing countries, including several in Southern Africa, have experienced a faster decline in fertility than in South Africa, albeit off a higher base, and starting later than observed in South Africa. It is worth noting, too, that there is little evidence of a change in the rate of decline coinciding with the implementation of the South African government's population programmes in either 1974 or 1984. However, the trend in total fertility is but one measure of changes in women's reproductive choices and preferences. In particular, the level of total fertility tells us only of the quantum of fertility – the number of children borne – and tells us almost nothing about the tempo of fertility – the timing of births through a woman's reproductive life. Thus, used in isolation, and without examination of changing tempo effects, the total fertility rate can give a false impression of fertility and childbearing dynamics in a country. Thus for example, in South Africa the President's Council Report of 1983 made exactly this error when, having commented on the slow pace of decline in the fertility of African South Africans, declared that

“In contrast with the Asian and Coloured populations, the level of socio-economic development and the psychological climate among Blacks are not yet favourable enough for modern contraceptive usage to be accepted on a large scale and to be conducive to rapidly declining fertility”. (South Africa, 1983:103)

As the next two sections will show, the fact that fertility was declining slowly masked important changes in women's reproductive strategies, and the presumption by apartheid planners that contraceptives would be used solely to limit fertility, rather than for other purposes (for example, spacing), is shown to be flawed.

### **2.3 Trends in birth intervals derived from the 1987-9 and 1998 South Africa DHS**

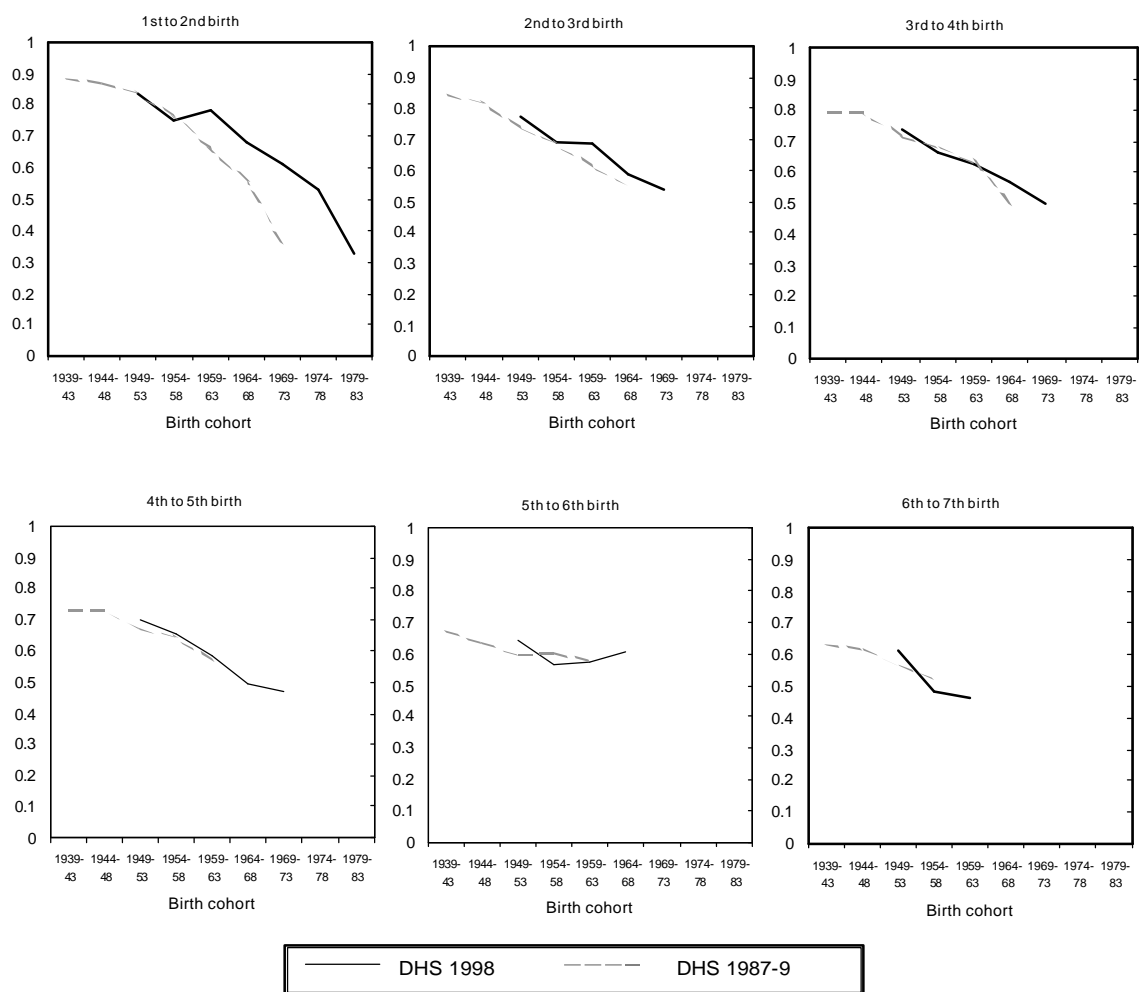
The evolution of African women's propensity to limit the size of their families over time are examined using a method derived by Brass and Juárez (1983) to calculate unbiased estimates of quantum changes in fertility. The approach uses life table techniques to deal with the problem of censoring and examines the proportion of women ( $B_x$ ) progressing to a next birth within  $x$  months of her previous birth. Commonly, a value of 60 months (i.e. 5 years, and hence termed *quintum*) is suggested as being long enough for most women who will ever do so to progress to a next birth, while avoiding the problem of increasingly sparse data when higher values of  $x$  are chosen.

A further advantage in the context of the available South African data is that the  $B_x$ s are less sensitive to inconsistencies in sampling between two similar data sets. The method avoids this insofar as the data required relate to the birth intervals and timing of births – i.e. only information on parous women is used.

In South Africa, the *mean* progression time from one birth to the next is in excess of 40 months for most age groups and parities. Accordingly a value of  $x$  much greater than 60 months is required to estimate parity progression. After examination of the data, a more appropriate value of  $x$  was adopted of 84 months – thus allowing seven years between births. There is no specific parity before which the  $B_{84}$ s are invariant, and above which they drop.

In addition, the (approximate) ten-year gap between the two surveys means that the values of  $B_{84}$  for women in the same birth cohort derived from two different surveys can be plotted against each other, and results in the patterns of parity progression shown in Figure 2.3.

**Figure 2.3 Proportion of women progressing to another birth within seven years: 1987-9 DHS and 1998 DHS**



Except for the first transition (from a first to a second birth), the correspondence between the two data series is remarkable, suggesting that the quality of the 1987-9 DHS data (at least in relation to fertility and childbearing) may not be as poor as has been suggested. Figure 2.3 demonstrates that the proportion of women progressing to a subsequent birth has been falling for all cohorts of women born after 1949. Thus, for example, while nearly four out of every five

African women born before 1949 were expected to progress from a third to a fourth birth, that proportion had declined to around half among women born twenty years later. Thus there is little evidence of a socially-sanctioned “optimal” number of children that a woman should bear.

Given the general level of agreement between the parity progression ratios calculated from the two surveys, the large discrepancy between the ratios at younger ages in the transition from a first to second birth is surprising. One explanation for the discrepancy may be that the sampling design of the 1987-9 survey (which included only married women, or unmarried women who had borne a child), encouraged fieldworkers to omit births to younger, unmarried women.

One limitation of the  $B_{34}$ s is that they mask the effect of changing times within that seven-year period during which women have a subsequent birth. This is investigated through the analysis of median birth intervals, which are presented in the next section.

### 2.3.1 Analysis of birth intervals

By using a paired comparison technique of using equally truncated data, estimates of median birth intervals can be derived. This then is an extension of Brass and Juárez’ truncated projected parity progression technique (Aoun, 1989a, b). Projected median birth intervals are derived in the same manner as that used for calculating  $B_{x,s}$ , but instead of using the proportion of women progressing from one parity to the next, the method uses truncated data to calculate the relative changes in median intervals between births. As discussed in Moultrie (2002), the method produces reasonable results only where the proportion of women who have actually experienced the parity progression of interest is high. In other circumstances, where only a few women have done so, the projected median birth intervals are distorted by the magnitude of the adjustment made in respect of the indices of relative change. Hence, the tables that follow present projected median birth intervals only for those combinations of age and parity where more than 80 percent of women have actually progressed to that parity. The data in italics reflect those combinations of age and parity where between 65 and 80 percent of women have undergone that progression. Clearly, these data are less reliable than those indicated in normal type.

**Table 2.2 Projected median birth intervals (months) using the truncation approach, 1998 DHS**

<i>Age group</i>	<i>Parity Progression</i>						
	1-2	2-3	3-4	4-5	5-6	6-7	7-8
30-34	55.4						
35-39	43.7	<i>49.3</i>	<i>56.7</i>				
40-44	44.3	49.9	<i>50.4</i>	50.2			
45-49	35.4	39.0	40.5	42.7	50.3		

These data show very clearly that projected birth intervals have lengthened dramatically among younger women, irrespective of parity. A similar trend is found in the earlier DHS data,

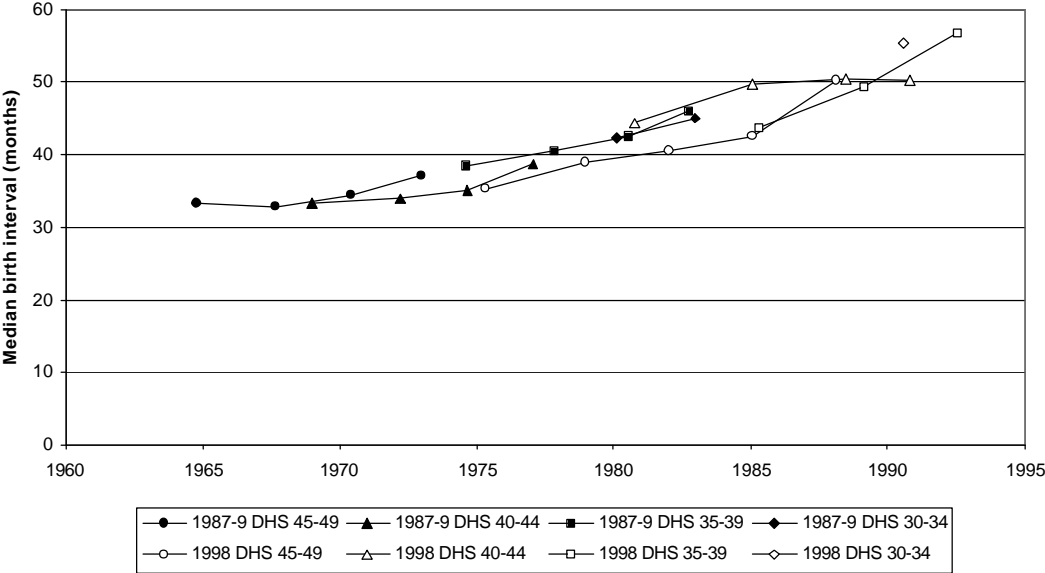
with median birth intervals showing signs of lengthening for more recent births (i.e. earlier parities for younger women, later parities for older women). The 1987-9 DHS data show little change in median birth intervals among women older than forty at the time of their first few births. With entry into motherhood occurring around the age of 20, this means that a rough dating of the start of the increase in median birth intervals would be towards the start of the 1970s.

**Table 2.3 Projected median birth intervals (months) using the truncation approach, 1987-9 DHS**

Age group	Parity Progression						
	1-2	2-3	3-4	4-5	5-6	6-7	7-8
30-34	42.3	45.0					
35-39	38.4	40.5	42.5	46.0			
40-44	33.3	33.9	35.1	38.8	49.2		
45-49	33.3	32.9	34.5	37.1	45.4	44.9	55.2

A further elaboration of Aoun’s approach is to locate the median birth intervals in chronological time, so as to understand better the secular trend in birth intervals in South Africa over the last forty years. This is done by adding the projected median birth interval to the mean date of birth recorded for each parity by the mother’s age group at the survey, and comparing this with the projected median birth interval (Figure 2.4).

**Figure 2.4 Time location of births using projected median birth intervals, 1987-9 DHS and 1998 DHS**



The figure above suggests that there is little significant variation in median birth interval length associated with age of mother or parity: the median birth intervals of women aged 45-49 in the 1987-9 DHS progressing to their fifth birth are very similar to those of women ten years younger who at the time were progressing to their second birth. Thus, birth intervals seem to

have followed a secular trend, increasing with time, rather than being determined by mother's age or parity. Further analysis (Moultrie and Timæus, 2002) has shown predictable patterns in these relationships by contraceptive use status and urban vs. rural residence. In the case of the former, the birth intervals of women who had not used modern contraception prior to the birth of the index child had remained roughly constant over the last twenty five years, under 40 months, while those of contraceptive users had increased. Median birth intervals for both urban and rural women have increased, although substantially more so among urban women. In all cases, however, the divergence in birth intervals occurred only after 1974, indicating that while the country's first population programme may not have succeeded in reducing the level of fertility among African South African women as had been hoped, it did allow women the scope to use contraceptives in a way that made sense to them, and which afforded them a greater degree of control over their lives.

The results presented indicate that a major change has occurred in urban African fertility in South Africa over the last 30 years. These findings are both important and significant. Younger women in South Africa are less likely to progress to higher-order births than older women. At the same time, those that do progress are taking much longer to do so.

#### **2.4 The nature of the South African fertility decline**

The material presented above provides the basic data with which to assess the trajectory and nature of the South African fertility decline. Certain features make this decline stand out from that observed in other African countries, and the developing world generally, and it is these features (and, particularly, investigations into their underlying causes) that the remainder of this paper will explore in greater depth.

The first, and most obvious, aspect of the South African fertility decline is the slow path of decline that has been followed. Fertility among Africans has been falling for the better part of thirty years, and has yet to drop below three children per woman. Second, projected median birth intervals which were approximately constant (at around 30 months) for both rural and urban women in the years to 1970, have increased massively since. Among younger women, these intervals are now substantially longer than 60 months.

The South African fertility decline has exhibited similarities with the decline in other sub-Saharan African countries. Parity progression measures show that the South African fertility decline has not been characterised by parity-specific fertility limitation. In many respects, then, the South African fertility transition is occurring as Caldwell, Orubuloye and Caldwell (1992) hypothesised the African fertility decline would, at all ages and parities simultaneously. However,

a difference is that birth intervals in South Africa are now substantially longer than in any other sub-Saharan African country and suggests that South Africa is following a new variant of the African fertility transition, characterised by both lengthening birth intervals and low parity progression ratios.

In other work (Moultrie, 2002), it has been argued that the peculiar dynamics of the South African fertility transition are rendered explicable through the use of institutional analysis. By themselves, the data presented above beggar the question as to why women chose to use contraceptives to delay childbearing, seemingly without preference for an upper bound on that spacing. In that other work, evidence has been marshalled to argue that the pattern of fertility decline and increasing birth intervals is the path-dependent consequence of the institutional structure of South Africa under apartheid.

The institutional characteristics of the South African polity between 1950 and 1970 explain why the South African fertility decline has progressed so slowly. The slow pace of decline in fertility is not simply the product of Bantu education and influx control (as Chimere-Dan (1993) has argued), nor is it as anomalous as suggested by the Caldwelles (Caldwell and Caldwell, 1993). They had contrasted the high level of African fertility with the extent and scope of the 1974 National Family Planning Programme and the 1984 Population and Development Programme and the relatively high level of socio-economic development in the country. Three explanations as to why South African fertility had not fallen further were proposed.

First, they suggested that widespread community and political resistance from Africans undermined the government's family planning programme. This explanation is flawed on many grounds. First, the rapid rates of uptake of modern contraceptive methods are incongruent with widespread resistance to the use of family planning. Second, the nature of the apartheid state disrupted African communities, and actively hindered the formation of strong community culture and local institutions. The absence of a strong resistance to the generalised system of racism through most of the apartheid years makes the possibility of resistance to a family planning programme implausible, and historical evidence suggests that African opposition to family planning from the 1960s onwards was sporadic and muted. With the clearly articulated desire by the early 1970s among African women in urban areas for further information on contraception, and comparatively fast rates of take-up, it would seem that the White fears of a generalised resistance to family planning among Africans were, to say the least, overstated. Most frequently, African opposition to family planning was articulated in terms of the racialised discourse on population, rather than on the merits of contraception *per se*. (One of the more trenchant articulations of this was a polemic written for the African Communist, which referred to family

planning in South Africa as being “genocidal” (Letsema, 1982). Importantly, too, opposition to family planning was found predominantly amongst men, and was not representative of a more general African opposition. This suggests that, along lines similar to those argued by van der Vliet (1991), use of contraception was perceived by men to constitute a further threat against their traditional control over women and women’s reproduction. Women favoured the use of the injectable contraceptive (Depo-Provera) not least because compliance was easy, protection against pregnancy was afforded for long periods at a time, and because it was ‘invisible’ was less likely to arouse male opposition.

The second explanation offered was that fertility control was “pointless”, since the social stratification of South African society made social mobility impossible. While African social mobility may have been difficult and obstructed, the Caldwell’s argument does not square with economic histories of South Africa. Both Beinart (1994) and Lipton (1985) discuss the social changes that occurred in South African society, and the South African labour market particularly, between 1970 and 1990. They argue that, while social mobility was indeed difficult and obstructed, it was not impossible. More importantly, this period was characterised simultaneously by both political repression and the gradual freeing up of the South African social order, as economic growth systematically undid racist job-reservation policies and the government lost the political will to enforce restrictions on African urbanisation.

The Caldwell’s third argument, that there are “profound cultural and social differences” in South Africa, resulting in a “refusal” by Africans to limit their fertility has been shown to be wrong by more recent data and the lack of women’s resistance to (at least to the idea of) parity-specific fertility limitation indicated in the 1969-70 urban studies. As shown in Section 2, South African fertility has been falling gradually for the best part of half a century, to a level that is now low by developing country standards.

Rather than being explanations in and of themselves, these explanations are indicative of the institutional dynamics that were at work in South Africa over that period.

As argued elsewhere (Moultrie, 2002), the slow pace of the South African fertility decline is attributable to a range of institutional and structural factors. As a result of internal contradiction and policy changes over time, the state was never able to establish a firm grip on the African household economy, and thereby manipulate the economics of the supply and demand for children. Government social and economic policies, whilst appearing to adopt the rhetoric of modernisation and demographic transition theory, were generally inimical to rapid fertility

decline. The policies adopted (particularly those relating to influx control, education and urbanisation) had the effect of attenuating the potential benefits of modernisation.

Beyond the structural constraints on women's lives imposed by apartheid, the apartheid state embodied neither of McNicoll's two paths of state-led fertility decline (McNicoll, 1996). State-individual relationships with Africans were not regularised, but equally, the state could not (and would not) use duress to dictate the pace of the South African fertility transition.

Second, apartheid institutions had the (unintended) effect of precipitating an irrevocable transformation of gender relations between African men and women. Migrant labour, restrictions on urbanisation and forced removals distorted and disrupted the formation of stable households and relationships. By the early 1980s, large numbers of African women were living in households headed by themselves or by other women, and – in many respects – viewed men as superfluous. This change in gender relations is made clear too, by women's adoption of modern contraceptive methods in the face of male opposition based on political and patriarchal views.

The family planning programmes introduced in 1974 and 1984 helped to make modern contraception methods easily and widely available to African women, and were effective at least insofar as they assisted the rapid uptake of contraception by African women. However, urban African's women demand for contraception predated these programmes, and hence that demand must, in some sense, be seen to have arisen from outside the realm of White discourse on population. Moreover, there is little evidence that these programmes altered the pace of the South African fertility decline, and given that the fundamental reason for the launch of those programmes was to provide a vehicle for the rapid decline of African fertility, the programmes must be said to have failed.

What the programmes offered, instead, was a mechanism whereby African women could assert a greater degree of control of their lives and their reproduction in a setting where the state and its institutional structures exercised huge power over individuals. Women's tenuous urban livelihoods, and poverty in rural areas, coupled with the state's inability to fundamentally alter the conditions of African household economics, meant that women sought modern contraceptive methods not to limit their fertility, but as an economic survival strategy.

Contraception, while widely desired, was viewed – primarily – as a mechanism for spacing children, rather than limiting fertility. However, in the context of South Africa, this simple dichotomy is probably inadequate.

The conclusion drawn is that, both currently and historically, parity-specific fertility limitation is unlikely to have occurred during the South African fertility transition. However, the pattern of contraceptive use, birth intervals and fertility among African South Africans is equally

not entirely consistent with the use for birth spacing, insofar as women's decision to use contraception was contingent neither on her parity (i.e. limitation) nor on the age of her youngest child (i.e. spacing in the conventional sense). This then suggests a third pattern of contraceptive use, probably most associated with societies where marital relationships are as severely disrupted by institutional dynamics as in South Africa, hinging on women's desire to delay pregnancy and its associated costs *sine die*, and without consideration for parity or age of other children<sup>2</sup>.

Thus, although adoption of contraception was fairly rapid by African standards from the 1960s onwards, the effect on the overall level of fertility was less than expected because it was used for neither spacing nor limitation purposes, but for simply delaying the next birth. As increasing numbers of women adopted contraception for this purpose, the effect would have been to set in motion a chain of increasingly delayed births. It is this process that has led to the very slow pace of the decline in South African fertility: Bongaarts (1999) has shown mathematically that an apparent decline in fertility will appear if, in every succeeding year, a greater proportion of women delays their birth by a longer time.

The slow decline in fertility and the rapid rise in birth intervals are thus not incongruous with each other. Rather, the structural and institutional context in which African women found themselves in between 1960 and 1990 has resulted in a new pattern of fertility decline.

The South African fertility decline represents, in many respects, an interesting counterpoint to that seen elsewhere in Africa. From an institutional perspective, aspects of the decline exhibit similarities with that seen elsewhere in the sub-continent. While, unlike elsewhere, the state was relatively strong, and did not show the same prebendal tendencies so often associated with states in the sub-continent, the inability of the South African apartheid state to direct the course of the fertility transition is indicative of its failure, in Goran Hyden's (Hyden, 1983) phrase, to fully "capture" the African population. This failure to capture the African population, combined with the contradictory ambitions of government policy provides a better explanation for the slow pace of the South African fertility decline than simply instrumentalist assessments based on the provision of services, and apartheid restrictions on spatial mobility.

In conclusion, the South African fertility decline was not hastened by the government's early implementation of family planning services – rather, contraception offered women an opportunity to take control of their own reproductive needs within the broader structure of South African society. The combination of apartheid policies, the institutional structure of South African society, and the subversion of the government's strong and vigorous family planning

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<sup>2</sup> I am grateful to Dr Ian Timæus for pointing out this distinction.

campaigns explains the dynamics of the South African fertility transition far better than simply appealing to any one of these forces, since they were reflexively bound up with, and continually mediated, each other.

Thus, the South African fertility decline provides further support for McNicoll's argument that fertility transition is innately and inherently institutional. Where social institutions are ill-conducive to fertility change, even the strongest family planning programme is likely to have a limited impact.

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### 3 FUTURE TRENDS IN SOUTH AFRICAN FERTILITY

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Any discussion on anticipated demographic changes in South Africa has to take the impact of the HIV/AIDS epidemic into account. Much has been written about the overall demographic implications of the HIV/AIDS epidemic that is spreading across the country, and this literature is not discussed or reviewed here, except insofar as the results of the ASSA 2000 AIDS model (Actuarial Society of South Africa, 2002) are used to give a sense of future fertility dynamics. Hence, the emphasis in this section will be solely on the projected trends in South African fertility in the next few years.

The previous section suggests that the pattern of birth spacing and fertility seen in South Africa since the 1970s exhibits a strong path-dependence. This arises from the fact that the forces of history exert long-term consequences:

institutions evolve through history, but they do not reliably reach unique and efficient equilibria. History is not always efficient, in the sense of weeding out social practices that impede progress and encourage collective irrationality. On the contrary, individuals responding rationally to the social context bequeathed to them by history reinforce social pathologies. (Putnam, 1993:179)

Earlier research supports the application of this framework to the analysis of demographic trends in South Africa (Moultrie, 2002). In other words, the patterns of childbearing and fertility that developed in South Africa in response to apartheid policies and institutions have themselves become institutionalised. Thus, there is no sign of the increase in birth intervals in South Africa levelling off at a new (higher) level after the demise of apartheid.

While this process cannot, of course, continue indefinitely, the first assumption must be that there will not be a significant reversal in women's reproductive intentions and desires regarding birth spacing in the short-to-medium term. Simultaneously, there are few grounds to suppose that the gradual decline in the level of fertility observed since the 1960s will not continue. And, given the spread of HIV and our knowledge of the relationships between infection with HIV and fertility, there are even fewer grounds for suspecting that fertility rates in South Africa may rise to any significant degree in the next few years.

At this point, it is worth summarising the current state of knowledge of the relationships between HIV and fertility as recently outlined in a research report produced by the United Nations (United Nations, 2002).

- There is no substantive evidence of fertility in sub-Saharan African populations rising to compensate for higher adult or child mortality;

- Women infected with HIV are repeatedly shown to have lower fertility (and probably lower chances of falling pregnant) than uninfected women. Whether this is a direct consequence of infection with HIV, or a consequence of co-infection with other sexually transmitted diseases (themselves a risk factor for HIV infection) is debatable;
- Regardless of the above, women infected with HIV have higher rates of foetal loss than uninfected women;
- It is – at least theoretically – possible that, in a severe AIDS epidemic, the measured level of fertility may rise as a result of the elimination of lower-fertility women from the population of childbearing women. However, this compositional effect has yet to be documented in practice, as it seems that the downward pressures on fertility are greater than the compositional effects;
- It is suspected that the biggest effect of the epidemic on fertility may not operate through HIV infected women at all. Instead, the possibility is raised that those women who remain uninfected may delay or reduce their exposure to marriage and childbearing, and hence the decline in fertility among uninfected women may be faster than that among infected women.

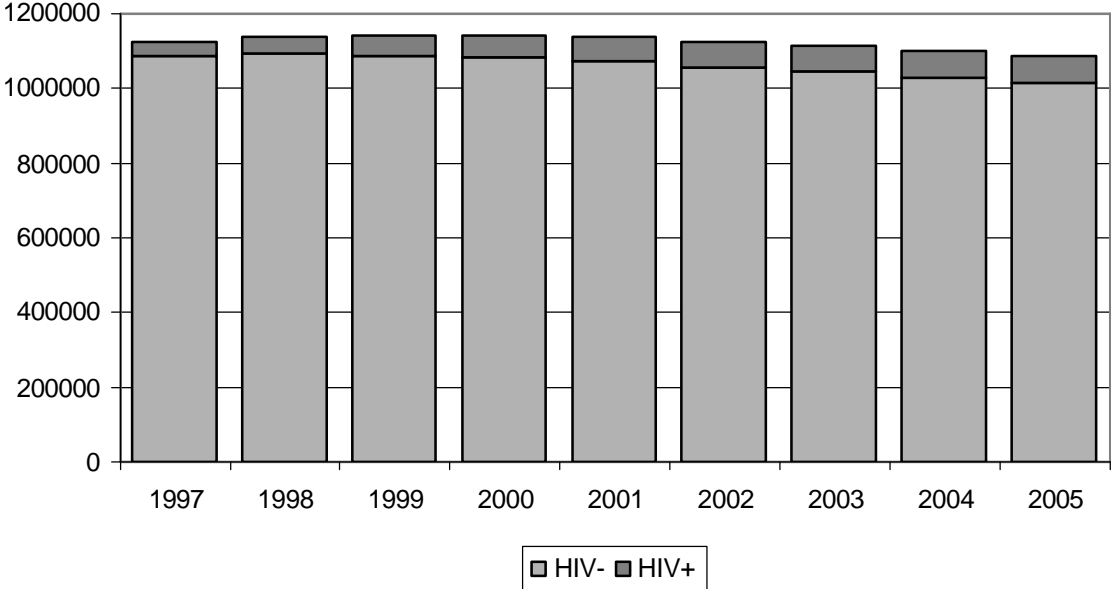
Quite what the effect of the epidemic on South African fertility in the coming years will be is a matter of speculation. However, some features of the South African fertility decline are almost certain to continue.

The first is that, in absolute terms, the number of births in South Africa has already peaked<sup>3</sup>. According to the ASSA 2000 model, the high water mark was reached in 1999. Even if that projection proved a couple of years premature, now – at the end of 2002 – there can be almost no doubt that South Africa has passed that point. The magnitude of this demographic change cannot be underestimated, and will be dwelt on further in the conclusions to this paper. According to the ASSA model, by 2005, the number of children born (including those born infected with the HI virus) will be approximately 5 per cent lower than that born in 1999 (Figure 3.1).

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<sup>3</sup> Note that this is not the number of **reported** births, but the actual number of births. Where registration is improving, the number of registered births may appear to indicate a trend of increasing number s of actual births for several years to come.

**Figure 3.1 Projected numbers of births in South Africa, 1997-2002, Actuarial Society of South Africa model**



Source: Actuarial Society of South Africa AIDS model

In terms of fertility rates, a plausible pattern emerges from the ASSA model. Fertility among white and Asian/Indian South Africans, which is already close to a replacement level of just over two children per woman is expected to remain unchanged over the next few years. By contrast, the projected level of fertility among coloured women is expected to decline by approximately 9 percent between 1997 and 2005, while that among African women by 2005 is expected to have fallen by no less than 17 percent from 1997 levels.

The extraordinarily long birth intervals documented in South Africa will exacerbate the HIV/AIDS-related morbidity and mortality effects on fertility. HIV/AIDS morbidity and mortality will be highest among women in their mid-30s, thus reducing the number of children borne by these women. In addition, long birth intervals raise the mean age of childbearing, thereby reducing the number of children borne by women by the time they reach their mid-30s. Indeed, the effects of HIV/AIDS on fertility can be observed from the fact that, according to a Department of Health report into maternal mortality, 82 out of 565 maternal deaths in 1998 were recorded as being due to AIDS<sup>4</sup>, and of these women (nearly three quarters of whom were aged less than thirty) more than 87 percent had had fewer than three deliveries (Department of Health, 1999a).

<sup>4</sup> Due to the manner in which deaths, and causes of deaths, in South Africa are reported, HIV/AIDS-related deaths are almost certainly underreported.

This paper has used a variety of demographic techniques, as well as demographic projections, to investigate and explain the dynamics of the South African fertility decline. First, the results show unequivocally the slow, gradual pace of that decline. What has not been properly identified before is the increase in median birth intervals among African South African women. Even if the origins of this increase lie in the particular institutional pathology of apartheid South Africa, there has been no let-up in the rate of increase in these birth intervals after the end of apartheid. Second, the paper suggests that an important demographic change has slipped past us almost unnoticed. We can be almost certain that at some point in the last few years the total number of births in the country began what will be a long-term downward trend.

This will have important implications for many aspects of development and labour market policy. These implications are discussed below. The pattern of fertility decline observed in the past has held important ramifications for women's ability to participate in the labour market. Unlike women in other parts of the developing world (Latin America is a case in point), African South African women have not sought to complete their childbearing at a relatively young age, thereby making their participation in the labour force possible for an extended period of time once the last child has reached school-going age. In South Africa, while extended birth intervals may have indeed formed part of a social and economic survival strategy, an unintended consequence of this pattern has been to further restrict women's ability to participate fully or effectively in the labour market, as women would have to remove themselves from the labour force just at the point where they may have been able to resume a career. Longer birth intervals, combined with fewer children would mean a less punctuated involvement in the labour force in the future. An urgent priority, however, must be to reduce the number of women giving birth to their first child before the age of 20. In the late 1990s, approximately one in six births to South African women were to women still in their teens.

The pattern of fertility shown in the past, and anticipated in future, also carry implications for policy formulation beyond the effect on mothers. With fewer children borne in each year, the challenges to the provision of infrastructure are no longer what they were. As a case in point, fewer children may mean (*ceteris paribus*) smaller class sizes, or the need for fewer schools<sup>5</sup>. If the ASSA 2002 model is correct, then the enrolment classes of 2005 and beyond should be smaller each year. The implications of this are legion. Development strategies will have to adopt a more targeted approach to infrastructural provisioning. To avoid waste, planning of new schools

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<sup>5</sup> This is a point that has been missed frequently by commentators on the AIDS epidemic. For example, Crouch (2001) discusses at length the anticipated shortage of teachers as a result of the epidemic, but makes almost no attempt to quantify the effects of reducing fertility (in part a consequence of the epidemic) on the number of pupils.

should take the expected school-going population, as well as internal migration patterns, into account.

Most importantly, however, the declining number of births should permit a shift towards placing emphasis on quality, and not quantity, of many social goods in the development of South Africa.

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