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**WANTED AND UNWANTED FERTILITY AND**

**THE GHANAIAN FERTILITY DECLINE: A**

**RESEARCH NOTE**

## INTRODUCTION

West Africa is one of the few remaining sub-regions of the world where the overall TFR exceeds five births per woman and no nation-state has a TFR less than four births per woman. Two facts about fertility in West Africa are indisputable: fertility remains high by international standards; the pace of decline is slow. A number of factors account for the historical high fertility demand in West Africa. These factors can be subsumed under kinship, property, religious and old age security motives for children (Caldwell and Caldwell 1987, Ahonsi 1990).

Compared to Eastern and Southern Africa, the onset of fertility decline begun at a relatively later date in West Africa. Indeed when the onset of fertility decline in Sub-Saharan Africa begun in the late 1980s, none of the countries in West Africa were mentioned. The initial declines and the subsequent debates were all centered on Zimbabwe, Botswana, Kenya and South Africa (van de Walle and Foster, Caldwell et al. 1992, 1993, Frank and Bongaarts 1990, Thomas and Muvandi 1994). This is quite interesting given the fact that Ghana had in the late 1970s showed signs of a decline to low fertility (Cochrane and Farid 1989).

However by the early 1990s it has become apparent that fertility transition had begun in West Africa. Several major countries in the region notably, Ghana, Nigeria, Senegal,

Cote d'Ivoire, Togo and probably Benin as well, provide solid evidence of the onset of a transition to low fertility. The most dramatic case is Ghana, where DHS estimates show a progression of TFRs from 6.4 in 1988 to 5.5 in 1993 to 4.6 in 1998. In 2003, the rate reported was 4.4 indicating a pause in fertility decline (Agyei-Mensah 2006).

The trends in fertility transition in West Africa like the rest of Africa have provoked interesting explanations in recent decades. However, most of the explanations with a few exceptions (Westoff and Cross 2006; White et al. 2006) have failed to account for the role of fertility motivations and aspirations in limiting births. Some recent studies on fertility in Africa have even questioned the meaningfulness of the notion of unwanted fertility. This includes an article by Johnston-Hanks (2007) and also Agadjanian's (2005) piece on fertility preferences in Mozambique.

These articles argue that African women do not take a long term perspective-including reaching a point where they decide that they want no further children any time in the future-rather the desire to have another child is continuously and repeatedly re-evaluated (in effect, continual cost-benefit analysis) and is subject to repeated modification as individual and household circumstances change. In effect, reproductive decision-making in African societies is all in the moment, with very short time-horizon. Johnson-Hanks (2007) and Agadjanian (2005) conclude by saying:

'Much of African reproduction conforms neither to the definition of natural nor of controlled fertility, but represents some third, not intermediate, but frankly different, regime' (Johnson-Hanks page 1036).

...In a rapidly changing social and reproductive environment, where the pronatalist inertia of rural tradition and the antinatalist pressure of modern life collide, individual fertility intentions, even though increasingly oriented toward smaller families, are tentative and often contradictory (Agadjanian page 618)

The issue at stake is not the question of whether unwanted fertility is common in Ghana, now or in the past. Rather the issue is whether the concept of unwanted fertility makes sense i.e. that women reach a threshold at which point no further births are wanted, because a desired number has been attained.

Four major research questions are addressed: First, what is the meaning of the concept unwanted fertility and how is it measured? Second, how applicable is the concept of unwanted fertility in the Ghanaian case? Third, is the decline in fertility to date been primarily due to declines in unwanted or wanted fertility or both ? Fourth, what is the future course of Ghanaian fertility?

The paper is structured as follows. Following the introduction, the next section describes the concept of unwanted fertility, followed by an examination of patterns of Ghanaian fertility. Next, the paper explores patterns of unwanted fertility in Ghana

based on analyses of the Demographic and Health Surveys conducted since the late 1980s. The final section of the paper looks at the future course of Ghanaian fertility decline.

### **UNWANTED FERTILITY: CONCEPT AND MEASUREMENT**

In the demographic literature, unwanted births are typically defined as births whose order exceeds the women's (or couple's) desired number of children (ever born or surviving). The notion is that women (or couples) have a target number in mind – subject to revision, of course – and once this has been attained, further births are "unwanted". These are births that would not occur, presumably, were birth control perfectly successful, and this is the demographic utility of the concept of "unwanted" fertility as conventionally defined.

This is a somewhat stricter definition than one might encounter in the broader social science literature, not to mention in colloquial discourse. Under this definition, accidental pregnancies occurring to adolescent women who eventually want to have one or more children are not unwanted, rather simply mistimed. One might doubt, following Agadjanian and Johnson-Hanks, whether this concept can be applied straightforwardly to African fertility. It assumes articulation of a desired number of

children – a quantitative target – and some adherence to this goal, if not behaviourally then at least attitudinally. To be sure, the target number may be modified as circumstances change, but this is assumed to occur infrequently. Indeed, if the number is subject to frequent modification, then it is less consequential as a "target", and the conventional distinction between wanted and unwanted births – with its implication for the level of fertility in the presence of perfect birth control – is less meaningful.

An alternative and less narrow view is that births can be "unwanted" for multiple reasons – they may exceed a desired number of children, or they may occur at a time when a child is not wanted (whether or not another child is wanted sometime in the future, in fact little thought may have been given to this matter). This latter type of unwanted birth fits within Agadjanian's and Johnson-Hanks' descriptions of reproductive mentalities in Africa. The demographic implication of this latter type of unwanted birth is a complicated matter to assess. Incidentally, recent DHS surveys in sub-Saharan Africa show remarkably high fractions of first births declared "unwanted" retrospectively (Casterline and Chalasani 2007). Ghana is among the countries in which this phenomenon has emerged. This is consistent with a concept of unwanted fertility that encompasses short-term considerations as well as lifetime targets.

In the present analysis the conventional demographic approach to unwanted fertility is applied. In taking this approach, I do not intend an implicit rejection of a broader conceptualization of unwanted fertility. Rather, I take the view that a transition to low levels of fertility (e.g. TFRs less than 4.0) cannot occur unless couples (i) articulate target numbers of births that are modest or small in size, and (ii) take explicit steps to achieve these goals. Hence, the future course of fertility decline in Ghana requires that the wanted-unwanted distinction become a reality in the attitudes and corresponding behaviours of reproductive couples. As to whether or not the conventional demographic concept can validly be applied to Ghanaian society in the recent past and at present, am aware of little empirical research that addresses this question. Kodzi (2008) research analyzing five-year panel survey data collected in southern Ghana is certainly relevant. Kodzi shows that a high proportion of respondents maintain a "want no more children" stance from one survey round to the next, i.e. there is little transition away from this desire to terminate childbearing. These empirical results support the meaningfulness of the conventional demographic definition of unwanted fertility.

Measurement of unwanted fertility has long challenged demographers (see review in Casterline and el-Zeini 2007). Most survey-based methodologies require retrospective classification of births as unwanted. Such retrospective classifications are undermined by problems of memory recall and by respondents' unwillingness to label children

(most of whom will be alive at the time of the interview) as "unwanted", either implicitly or explicitly. Most existing methodologies probably under-estimate unwanted fertility in most societies. Casterline and el-Zeini (2007) have developed a new methodology that, if a few reasonable assumptions hold, generates more accurate estimates of unwanted fertility in most settings. The Casterline and el-Zeini (2007) method relies on the fertility attitudinal item that, among the set of items commonly available (e.g. in DHS surveys), has consistently been shown to possess the highest validity and reliability, namely the prospective preference item "do you want another child?". Details of the methodology are provided in Casterline and el-Zeini (2007). For this analysis of multiple Ghanaian surveys, I employ the software (in Stata) they have developed (using the "one-survey" variant and a 36-month reference period).

## **PATTERNS OF GHANAIAN FERTILITY**

Ghana provides an intriguing context in which to examine fertility declines, motivations and aspirations. Compared with other countries in the West African sub-region, fertility decline has been more rapid and substantial. This has apparently made Ghana the vanguard in the sub-region and of significant interest for policy makers and researchers alike. With a current Total Fertility Rate of 4.4 as at 2003, the TFR in Ghana is the lowest in the sub-region (Agyei-Mensah 2006). In the 1970s, the findings of the World Fertility Survey prompted in no small measure the argument that fertility decline had begun in



Ghana (Cochrane and Farid 1989). This was based on the evidence of a small decline in the five-year period preceding the 1979 GFS survey. A detailed data quality analysis of the GFS data at the time indicated that no severe omission of births had occurred, but that the number of children who had died had been underestimated (Owusu 1984). The argument of the decline in fertility was also bolstered by Singh and Shah's (1985) analysis that in spite of reporting errors which might have led to a spurious decline in fertility, the beginning of a long-term decline in fertility was consistent with the data.

However, the so called fertility decline was not sustained in the 1988 Ghana Demographic and Health Survey, leading to suggestions that the fertility decline may have stalled (Ghana Statistical Service 1989). Among the reasons cited for the absence of a further decline in fertility was the stability in age at first marriage, the very small increase in the use of contraception, out-migration of young males and the economic crisis that hit the country during the mid to late seventies and early eighties (Ghana Statistical Service 1989). More recently, Gaisie (2005) has produced a new set of estimates of the fertility data for the 1979 GFS which shows that the fertility rates were higher than the previously reported figure of the 1979 GFS (ie total fertility rate of 6.69 as compared with 6.47). Assuming this re-assessment is correct; it implies that there was no stall in fertility in Ghana in the 1980s. The subsequent Demographic and Health Surveys conducted in 1993, 1998, and 2003 underscore significant and steady declines in

fertility since then; falling from 6.43 in 1988 to 5.50 in 1993, 4.4 in 1998, and then a pause to 4.4 in 2003. There are also significant variations in fertility across urban and rural areas as well as regional differences.

### **CONCEPT OF UNWANTED FERTILITY: DOES IT APPLY?**

This section examines whether the concept of unwanted fertility is applicable within the Ghanaian context. Four main issues are considered:

- i. An examination of how desire to stop births increases with parity, and to determine whether increases in desire to stop over time is concentrated at higher parities.
- ii. To determine whether fertility decline has been concentrated at older ages
- iii. To examine how use of contraception increases with parity, and to determine whether increases in use over time is concentrated at higher parities.

#### ***How desire to stop increases with parity and whether increases are concentrated at higher parities***

As shown in Fig 1 and Tables 2 & 3 the percentage of currently married women who want no more children sharply increases with parity and is concentrated at higher parities. Urban women are more likely than rural women to want no more children regardless of the number of children they already have.

**Fig.1:Percent No more Among Currently in Union Women, 1979,1988, 1993, 1998, 2003**

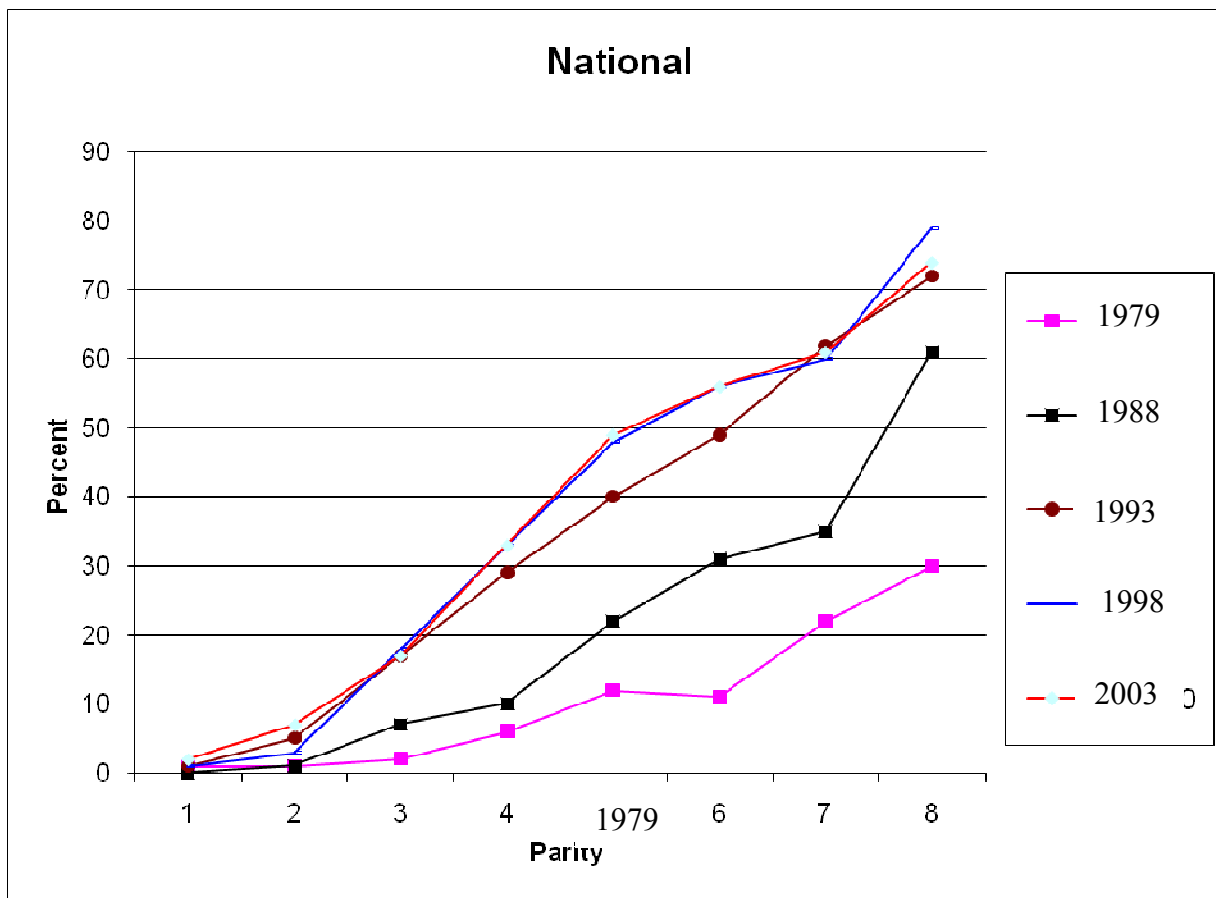


Table 2: Percent No More Among Currently in-Union Women  
Urban (GFS 1979, GDHS 1988, GDHS 1993, GDHS 1998, GDHS 2003)

Parity	79	88	93	98	2003
0	0	0	1	1	2
1	2	2	4	4	9
2	3	13	27	22	20
3	9	13	39	48	44
4	21	36	56	65	59
5	21	45	60	68	64
6	27	48	76	66	68
7	38	68	82	86	76
Total	13	28	37	37	36

Table 3: Percent No More Among Currently in-Union Women  
Rural (GFS 1979, GDHS 1988, GDHS 1993, GDHS 1998, GDHS 2003)

Parity	79	88	93	99	2003
0	1	1	0	1	2
1	1	0	5	3	5
2	1	4	11	16	14
3	5	9	24	24	26
4	8	16	33	40	41
5	7	23	45	51	51
6	20	30	58	60	59
7	28	59	70	77	74
Total	10	21	33	34	36

*Is the Fertility Decline Concentrated at Older Ages?*

The decline to date has not been concentrated in the older ages but rather distributed uniformly across ages. This is contrary to a model in which fertility decline is driven by

couples choosing to terminate childbearing after attaining a desired number of children.

Ghana's decline has not taken on this character yet.

For example, consider the change from 1988 – 2003:

	<u>Amount of Change</u>	<u>% change &lt;30</u>	<u>% change 30+</u>
National	2.0	52 %	48 %
Urban	2.2	57 %	43 %
Rural	1.4	45 %	55 %

While the decline to date has not been characterized by classic "stopping" behavior, it is difficult to imagine much further decline without such behavior beginning to dominate.

Is the slowdown in the decline after fertility fell below TFR=5.0 due to the fact that "stopping" behavior has not yet become prevalent? The decline in fertility at younger ages must be due to factors other than contraception: postponement of the start of childbearing and possibly induced abortion.

Table 4 Age-Specific Fertility Rates

Age	Survey				
	1979	1988	1993	1998	2003
<20	136	125	116	88	74
20-24	255	260	221	197	176
25-29	276	280	233	203	210
30-34	245	249	209	177	182
35-39	188	189	143	136	141
40-44	132	117	87	74	70
45+	61	61	22	11	36
TFR	6.5	6.4	5.2	4.4	4.4

**Table 5 Age-Specific Fertility Rates  
Urban Areas**

Age	Survey				
	1979	1988	1993	1998	2003
<20		89	86	56	42
20-24		215	157	134	128
25-29		269	190	151	157
30-34		212	167	137	145
35-39		138	97	83	95
40-44		88	36	27	39
45+		42	6	3	18
Total		5.3	3.7	3.0	3.1

**Table 6 Age-Specific Fertility Rates  
Rural Areas**

Age	Survey				
	1979	1988	1993	1998	2003
<20		147	139	108	113
20-24		282	264	236	225
25-29		285	257	233	256
30-34		267	232	199	213
35-39		216	167	163	179
40-44		131	112	97	95
45+		71	29	15	49
Total		7.0	6.0	5.3	5.6

*How Use of Contraception increases with parity and whether increase in use over time is concentrated at higher parities.*

In 1979, use of modern contraceptive methods hardly varied by women's parity. The predominant pattern of increase is clear: in urban areas, most of the increase is at parities 2 and above; in rural areas, most of the increase is at parities 4 and above. Overall changes in contraception is concentrated at older ages.

**Table 7 Percentage of Currently In-Union Women  
Using a Modern Method of Contraception**

Number of children ever born	Survey				
	1979	1988	1993	1998	2003
0	4	1	4	10	9
1	5	4	8	12	15
2	8	3	9	9	20
3	7	4	12	15	18
4	6	7	13	19	24
5	5	8	10	18	25
6	4	7	10	14	18
7+	4	7	10	14	19
Total	6	5	10	13	19



**Table 8 Percentage of Currently In-Union Women  
Using a Modern Method of Contraception:  
Urban Areas**

Number of children ever born	Survey				
	1979	1988	1993	1998	2003
0	4	1	4	9	13
1	10	5	14	15	17
2	14	4	15	13	25
3	12	8	21	21	27
4	11	11	19	28	30
5	6	15	23	26	35
6	4	11	18	9	25
7+	8	11	11	19	23
Total	9	8	16	17	24

**Table 9 Percentage of Currently In-Union Women  
Using a Modern Method of Contraception  
Rural Areas**

Number of children ever born	Survey				
	1979	1988	1993	1998	2003
0	4	1	4	10	5
1	3	3	5	10	12
2	4	3	6	6	15
3	4	5	7	11	12
4	3	5	10	19	24
5	5	5	6	14	19
6	3	5	8	14	19
7+	3	6	10	15	16
Total	4	4	7	11	18

## PATTERNS OF WANTED AND UNWANTED FERTILITY

Wanted fertility refers to the number of wanted births a woman is expected to have over the course of her reproductive career were she to follow the rates observed in the recent period. This section tries to question the question as to whether the decline to date has been due primarily to declines in wanted or unwanted fertility or perhaps substantial contribution of both. As seen in Table 10, much of the decline from 1988 to 2003 has been accounted for by significant reductions in wanted fertility. The percentage change in unwanted fertility is very small.

**Table 10: Wanted and Unwanted fertility, National, Urban, Rural 1979, 1988, 2003**

	1979			1988			2003		
	Wanted	Unwanted	Total	Wanted	Unwanted	Total	Wanted	Unwanted	Total
<b>National</b>	5.60	0.59	6.19	5.332	1.018	6.350	3.298	1.069	4.367
<b>Urban</b>	4.65	0.74	5.39	4.303	0.958	5.26	2.511	0.574	3.084
<b>Rural</b>	6.06	0.54	6.60	5.979	0.937	6.915	4.161	1.368	5.529

It is striking that in urban areas the wanted TFR in 2003 is 2.5 -- in these areas, elimination of unwanted fertility would bring the overall TFR down to a level not far above replacement. On the other hand, the unwanted TFR is only 0.6 (and the overall

TFR in urban areas is not much above 3.0, and realistically unwanted fertility cannot be eliminated, there will always be at least a few tenths of a birth of unwanted fertility (e.g. 0.2 or 0.3). Reducing fertility to replacement level in urban areas will require a mix of declines in wanted and unwanted fertility. Nationally, and in rural areas as well, there must be marked declines in both components (wanted and unwanted). It's a complicated picture if one considers the national pattern and the separate patterns for urban and rural areas. Certainly the decline to date has contained considerable decline in wanted fertility, nationally and in both types of areas. This is revealing empirical evidence. I might not have guessed that the declines in wanted fertility would have been so large, something of a surprise to me as against my a priori expectations. But the urban decline has also been aided substantially by decline in unwanted fertility (I guess about 20%-25% of the urban decline).

## **CONCLUSIONS: THE FUTURE COURSE OF GHANAIAN FERTILITY DECLINE**

Given the above background, I propose a two-stage model for fertility decline in West Africa. In brief, the essential argument is that in West Africa societies the shift from (roughly) four surviving children down to only two (or three) surviving births is quite distinct-in its motivation, and in the perceived risks it entails-than the shift from higher numbers down to (roughly) four children. The fundamentally different characters of these two stages of decline are: the first can be viewed as elimination of excess fertility,

and the second as a genuine shift to a small family regime. Implications of this model include (i) it is somewhat easier to achieve decline to four births per woman than beyond (ii) pauses in fertility decline when the TFR reaches roughly four births per woman are to be expected and should occasion little surprise.

This is not to deny that concern about the prospects for further decline after the first stage is not in order. The two-stage model underscores the point that under certain conditions fertility may settle for extended periods of time substantially above replacement level. The two-stage model, by emphasizing the different character of the two stages, focuses attention on those factors that may be decisive in determining whether fertility in West Africa can proceed more rapidly through the first stage, and whether the second stage will soon be initiated in vanguard countries (e.g. Ghana) in the near future.

To bring fertility further down we need to concentrate on how this excess fertility (unwanted) fertility must be eliminated". However, I don't think the historical picture so far has been as simple as "the first stage of the two stage model refers to the wanted pattern and the second stage the elimination of excess fertility". Of course this entire discourse makes sense only if one buys into the concept of "unwanted fertility" as we

have defined it. As noted in the earlier part of the paper, some scholars such as Johnston-hanks (2005) dispute this.

We should however keep in mind that wanted fertility (desired fertility) is a moving target, and the risk of unwanted fertility is a direct function of the desired fertility. That is, as desired fertility declines, then the opportunity for unwanted fertility increases. This is a point that Bongaarts has made over the years (see Bongaarts 1997). So in a sense the successful reduction in unwanted births in urban areas is almost certainly greater than 0.4 (0.96 - 0.57), because during these fifteen years desired fertility fell in urban areas, placing a larger fraction of women at risk of an unwanted birth. Urban areas probably show fertility decline between 1979 and 1988 and urban fertility hardly declines in this period, with wanted fertility falling a bit and unwanted fertility increasing a bit.

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