

Education, Ethnicity, and Reproductive Practice in Cameroon

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Most studies on the current fertility transition in the developing countries show that when the educational level of women rises, they bear fewer children. But Jennifer JOHNSON-HANKS observes that in Cameroon, premarital fertility is higher among women who have had schooling than among those who have not. By broadening the analysis to include ethnographic data, however, she is able to resolve this apparent paradox. Anthropological analysis is used here to shed light on the relations between socio-demographic variables, and to demonstrate that these relations, far from obeying a model of direct causality, must be interpreted in the framework of the values and practices prevailing in each society.

The inverse correlation between women's schooling and their fertility is one of the most remarkable and resilient findings of social science in the latter half of the twentieth century (Basu and Aaby, 1998, p.10). Throughout the developing world, educated women generally bear fewer children, and start bearing them later, than do their less educated counterparts (Adamchak and Ntseane, 1992; Bledsoe et al., 1999; Castro Martin, 1995; United Nations, 1995). The relationship is not always monotonic: throughout the 1970s and 1980s, fertility in many African countries followed an inverted-j pattern, in which women who attended a few years of school had higher fertility than the never-schooled, and fertility decline was associated only with advanced schooling (Lesthaeghe and Page, 1981)⁽¹⁾. Even where and when fertility declines steadily with rising education, both the slope and the intercept vary substantially (see Jejeebhoy, 1995 for a review). Despite these nuances and partial counter-examples, the near universality of the negative correlation is striking, and has generated substantial academic and policy interest.

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⁽¹⁾ Whereas in the 1998 Cameroon DHS, used here, fertility declines monotonically with rising education, in the 1991 DHS, the relationship is non-linear. The sets of demographic processes through which that change was effected will be the subject of a future article.

What are the social and demographic processes that underlie the relationship between education and fertility, and what kinds of political, economic, or cultural institutions enable these processes to persist? This article asks these questions in reference to one concrete case—the African country of Cameroon—as a critical part of a comparative theory. Data from the 1998 Demographic and Health Survey (DHS) of Cameroon, along with ethnographic information, show that educated Cameroonian women marry later and bear fewer children than their uneducated counterparts, in keeping with patterns established comparatively. However, they also have significantly higher premarital fertility rates than do women who have never been to school, a finding that contrasts with both the comparative literature and educated Cameroonian women's own claims about their reproductive behaviour. This apparent paradox generates a new set of questions about what school does or signals that matters for reproduction. Treating school as an institution imbued with certain kinds of social capital (Bourdieu, 1984, 1990) allows for a different understanding of the relationship between education, marriage, ethnicity, and childbearing.

In taking this position, the article builds on a corpus of scholarship that has focused on the relationship between demographic rates and social, political, or economic institutions or processes (e.g. Caldwell and Caldwell, 1987; Carter, 1995; Greenhalgh, 1995, 1997; Hammel, 1990; Kreager, 1982; Lesthaeghe, 1980; McNicoll, 1980; Pollack and Watkins, 1993; Watkins, 1990). In particular, the article responds to recent developments in the cultural demography of Africa. Scholars such as Agadjanian (2001), Bledsoe et al. (1998), and Zulu (2001) have sought to use qualitative methods not only to complement standard statistical analyses, but also to challenge classical interpretations and theories. This work suggests that the contribution of qualitative research is as much analytic and theoretical as it is methodological (Obermeyer, 1997, p. 815).

I. Education and fertility in Africa

The widely observed inverse correlation between schooling and fertility has drawn significant interest, both as a case study of social causation and as a potential locus of policy intervention. Much of the research on the topic has attempted to sort out the mechanisms—causal, selective, or otherwise—that might link schooling and fertility. Causal explanatory models have predominated, and been largely of two types, which are characterized here as cognitive and instrumental change models. The cognitive theories propose that schooling alters people's values and ways of seeing the world, changing women's perspectives, ideas and modes of thought (see Goody, 1968; Goody and Watt, 1963; LeVine and White, 1986; Ong, 1982; van de Walle, 1992). In these models, the educative processes transform the mental frameworks that women use to evaluate the

world and make decisions about it, more than they do the objective conditions under which those decisions are made. For example, in his classic model of the prerequisites of fertility change, Coale (1973) included that fertility must become subject to the “calculus of conscious choice”; in a cognitive model of the correlation between schooling and fertility change, formal education would be seen as functioning to bring fertility into that calculus. Theories of instrumental change, by contrast, emphasize that schooling changes the objective conditions under which decisions are made, for example by increasing the opportunity cost of women’s labour (e.g. Ainsworth, 1988; Becker, 1991; Caldwell, 1980; Easterlin and Crimmins, 1985; Lloyd and Gage-Brandon, 1992). Most of these models are micro-economic and propose that educated women, making exactly the same type of rational choices as uneducated women, will bear fewer children as their relative cost increases.

Both cognitive and instrumental change models emphasize that education encourages women to *desire* fewer children, although for different reasons: they are “demand-side” theories. Cleland and Kaufman (1998), by contrast, have argued that schooling influences not only the numbers of children that women wish to bear, but also their ability to achieve their reproductive goals. Insofar as educated women are more able to negotiate with pronatalist in-laws or off-putting family planning clinics, this revision seems well taken. Further, some historical and cultural studies of fertility have suggested that the focus on child numbers may itself be in error. In many societies, it appears that child numbers *per se* are only of secondary importance to the timing of births, the composition of their sexes and other attributes, or their location in on-going negotiations of household and kinship (Bledsoe, 2002; Delaunay, 1994; Feldman-Salvellsberg, 1999; Guyer, 1993; Hertrich, 1996; Johnson-Hanks, 2002; Picard-Tortorici, 1998). Insofar as the intentional frames relevant to reproductive rates are about timing, composition, and social negotiation, the effect of schooling on fertility must similarly be mediated through factors other than desired family size or the ability to achieve it.

In Africa, debates about the mechanisms linking schooling and fertility intersect with a long and fruitful corpus of work on the causes of continued high fertility (see especially Caldwell, 1980; Caldwell and Caldwell, 1987). Some empirical research suggests that in Africa the inverse correlation may work in particular ways not seen elsewhere. For example, Shapiro and Tambashe (1997) show complicated interactions between schooling level and family planning regime in Kinshasa: the most educated women use contraception to avert births, whereas the less educated use abortion, and women with no schooling use neither. That is, instead of a gradient, Shapiro and Tambashe find three distinct patterns of reproductive management, implying that in reference to fertility practices at least, secondary school is not a continuation of primary school, but rather has distinct social effects. Mensch et al. (2001) argue that the rela-

tionship between schooling, school environment, and premarital sex is strongly contingent on social context. Using data from Kenya, the authors find that schoolgirls in “gender-neutral” environments are less likely to engage in premarital sex than others. Close analyses of the correlation between schooling and fertility in Africa thus offer particular analytic purchase on two issues: that of African fertility decline and that of the near universal inverse correlation between schooling and fertility.

II. Data and methods

This article relies primarily on data from two sources: the women’s individual recode files from the 1998 Cameroon DHS, and ethnographic sources, both primary and published. The DHS is a nationally representative sample survey of 5,501 women, carried out by Macro International in conjunction with the *Bureau Central des Recensements et des Études de Population* of Cameroon. (For a discussion of sampling, translation, and interview methods, see Fotso et al., 1999.) Descriptive statistics are calculated using ordinary methods, and most rates, including total and marital fertility rates, are based on one year of data. Because of the small sample size, the premarital fertility rates are calculated over the five years prior to the survey. This calculation required coding births as marital or premarital based on the date of the first marriage and the dates of specific births in the birth register (numerator), and calculating person years lived by age in the single state over the previous five years from the age at first marriage and current age (denominator). Here and throughout the article, premarital births refer to those that occur to women who had never married *at the time the birth occurred*, regardless of their marital status at the time of interview. Thus, women of all marital statuses at the time of survey could, theoretically, contribute both exposure to the risk of premarital childbearing and premarital births, depending on how recently they married for the first time, if at all.

The ethnographic materials I analyze include my own field notes from research among the Beti in 1996, 1998, and 2001 (described at length in Johnson-Kuhn, 2000), as well as published and archival sources regarding the Bulu-Beti-Fang and the Biu-Mandara. My analytic method follows standard anthropological practice, which seeks to establish the generative principles of action from the disparate cases and examples, much as a grammar distills the principles of language from the disparate examples of speech. My use of these materials is similar to the model of “demography *in situ*” proposed by Kreager (1982).

III. The empirical problem

In Cameroon in 1998, women with secondary schooling had lower age-specific fertility rates than women with primary schooling only, who in turn had lower fertility than women with no schooling, as shown in Table 1. The differentials can be accounted for both by lower participation in marriage and lower marital fertility. Table 2 shows the proportion of women ever married and currently married by age for each of the three educational groups, with the most educated also the least likely to be currently married at most ages. Table 3 shows their age-specific marital fertility rates; here again, the most educated have the lowest reproductive rates. These data would be predicted by any of the available theories of causal mechanisms, and conform to patterns established comparatively. However, when we turn to premarital childbearing, the picture changes considerably. Cameroonian women who have attended school have *higher* premarital fertility than do their age-mates who never attended school. This finding is both surprising and challenging, and requires more careful excavation.

TABLE 1.— AGE-SPECIFIC FERTILITY RATES BY LEVEL OF EDUCATION

Age	No schooling		Primary only		Secondary +	
	N	Rate	N	Rate	N	Rate
15-19	185	0.211	493	0.130	618	0.071
20-24	204	0.343	357	0.261	592	0.150
25-29	215	0.321	308	0.240	401	0.180
30-34	193	0.254	260	0.227	256	0.141
35-39	186	0.172	257	0.117	177	0.090
40-44	182	0.066	186	0.081	98	0.010
45-49	166	0.024	130	0.000	37	0.000
Total fertility		6.954		5.274		3.212

Source: Cameroon DHS 1998.

TABLE 2.— PROPORTION CURRENTLY AND EVER MARRIED BY LEVEL OF EDUCATION

Age	No schooling			Primary only			Secondary +		
	Currently married	Ever married	N	Currently married	Ever married	N	Currently married	Ever married	N
15-19	0.622	0.654	185	0.239	0.262	493	0.063	0.079	618
20-24	0.936	0.975	204	0.563	0.655	357	0.223	0.292	592
25-29	0.921	0.972	215	0.659	0.779	308	0.444	0.556	401
30-34	0.907	0.964	193	0.665	0.831	260	0.570	0.738	256
35-39	0.855	0.946	186	0.743	0.907	257	0.650	0.802	177
40-44	0.830	0.978	182	0.769	0.935	186	0.653	0.918	98
45-49	0.801	0.964	166	0.646	0.969	130	0.622	0.811	37

Source: Cameroon DHS 1998.

TABLE 3.— AGE-SPECIFIC MARITAL FERTILITY RATES BY LEVEL OF EDUCATION

Age	No schooling		Primary only		Secondary +	
	N	Rate	N	Rate	N	Rate
15-19	115	0.330	118	0.288	39	0.256
20-24	191	0.377	201	0.328	132	0.295
25-29	198	0.343	203	0.286	178	0.253
30-34	175	0.263	173	0.277	146	0.212
35-39	159	0.182	191	0.141	115	0.113
40-44	151	0.079	143	0.077	64	0.000
45-49	133	0.023	84	0.000	23	0.000

Source: Cameroon DHS 1998.

A discussion of marriage and its quantification in the DHS is essential here. Cameroonians can marry in several ways, including bridewealth marriage, civil or legal marriage, and religious marriage (either Muslim or Christian). Most couples, at least in the south, marry in several different ways over time, and the order of transitions is highly variable. Long-term cohabitation, socially recognized as being similar to marriage, is also common. The DHS relies on the interview subject's self-report of her marital status. The categories used in the DHS are finely graded—single, cohabiting, married, separated, divorced, widowed—and considerable effort is made to distinguish between women who are married and cohabiting, and between those who are separated and divorced. That said, the questionnaire does not distinguish between different marital regimes, such that women married legally, religiously, or with bridewealth are all called simply “married”. I use the reported age at first marriage to calculate both exposure to the risk of premarital childbearing and to identify premarital births. Systematic differences in the reporting of marriage date by education or ethnicity could therefore potentially undermine my interpretation. Such differences could be of two kinds. First, it is possible that women of different educational statuses consider different marital transitions as marking the beginning of marriage. Ethnographic work, however, indicates that most Cameroonian women consider themselves married if they have undergone *any* of the formal marital transitions; whichever marital event comes first, that is the one that makes them “married” (e.g. Geary 1986). The other possible source of error is the differential pre-dating of marriage to make a premarital birth appear marital. The demographic data speak strongly against the hypothesis that this is a significant problem. First, limiting the analysis to never-married women makes the education pattern stronger, not weaker. Second, if uneducated women were “correcting” their marriage dates to legitimize first births, then the average first birth interval among the uneducated would be shorter than among the educated, when in fact it is longer (data not shown). I thus conclude that the data on marriage data are usable, and that the sorting of births into the categories “marital” and “premarital” is legitimate.

Figure 1 shows the proportion of women at each age that have ever had a premarital birth, by educational status. Women with secondary school are the most likely to have ever had such a birth at all ages, and women with no education are the least likely. Among those who ever attended school, the proportion increases until the 25-29 year-old age group, then falls; for the never schooled, by contrast, the proportion rises until age 30-34 and remains mostly flat at older ages. The advantage of this graph is that it uses data from the whole DHS sample, so that the point estimates are relatively reliable. However, the figure conflates age effects with cohort effects, and does not take into account the fact that the most educated women have had the longest exposure to the risk of a premarital birth. Conflation of age and cohort is unavoidable with data from a single, retrospective survey. Differences in exposure, however, can be addressed through the calculation of age-specific premarital fertility rates, shown in Table 4.

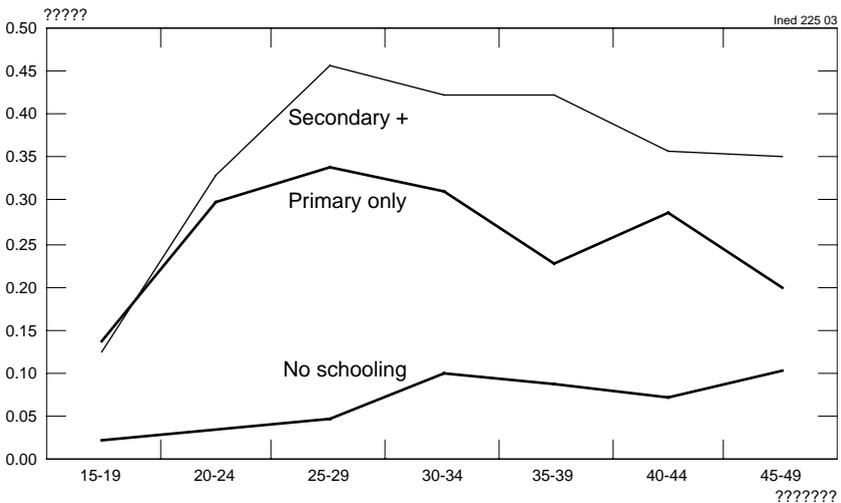


Figure 1.– Proportion of women who ever had a premarital birth, by age and level of education

Source: Cameroon DHS 1998.

The demographic and health surveys contain data on the respondent’s present age, age at first marriage, and the date of birth for each of her children. From these data, it is possible to calculate exposure to the risk of premarital childbearing and numbers of premarital births over the five years prior to the survey. The “premarital total fertility rate” should be interpreted as the number of children that a woman would bear over the course of her life if she survived through the ages of childbearing, never

married, and bore children at the observed premarital age-specific rates. The next row shows the 95% confidence interval for the PMTFR, calculated using bootstrap methods⁽²⁾. The last row of the table shows the premarital fertility rate as a proportion of the total fertility rate; this ratio answers the question, “A woman who remained single throughout her life would bear what proportion of the children borne to a woman with the average marital history?”

TABLE 4. – AGE-SPECIFIC PREMARITAL FERTILITY RATES BY LEVEL EDUCATION
(CALCULATED OVER PAST FIVE YEARS)

Age	No schooling		Primary only		Secondary +	
	N	Rate	N	Rate	N	Rate
15-19	329.5	0.021	1565.5	0.069	2981.0	0.051
20-24	36.5	0.110	518.5	0.199	1585.5	0.115
25-29	43.5	0.092	302.0	0.225	581.5	0.167
30-34	44.5	0.135	159.0	0.119	274.0	0.099
35-39	28.0	0.107	101.0	0.089	89.5	0.089
40-44	26.0	0.000	25.0	0.080	53.5	0.019
Premarital TFR		2.3		3.9		2.7
95% CI		0.95-3.7		3.0-5.1		2.2-3.4
Ratio of premarital to total fertility		0.35		0.76		0.76

Source: Cameroon DHS 1998.

For women with no education, the premarital total fertility rate is 2.3, more than four children below the TFR and about five and a half children below the total marital fertility rate. For women who have been to school, the reduction in childbearing associated with singlehood is much less. The total premarital fertility rate for women with primary education is 4.0, a little over one child below the TFR and about two and a half children below the marital TFR. For those with secondary education, the difference between the TFR and the premarital TFR is less than one child (2.7 rather than 3.6). Stated differently, a woman who attended school—regardless of the level—and stayed single her entire life would end up with about three-quarters as many children as her schoolmate who married at the median age and stayed married. By contrast, a woman who had never been to school and remained single would have only about a third as many children as her married counterpart.

Looking across, rather than within educational statuses, one sees that the lowest rates of premarital childbearing are found among women with

⁽²⁾ The confidence interval and the premarital TFR are calculated using the bootstrap (Efron and Tibshirani, 1998). In this method, the dataset is randomly sampled with replacement to generate new “bootstrap samples”. The statistic of interest, here the premarital TFR, is calculated for the new bootstrap sample, and the process is repeated a large number of times (1,000 in this case). The bootstrap estimate of the variation in the statistic is the standard deviation of the bootstrap replications.

no schooling. Women with primary schooling have the highest rates, and the difference between the two groups is significant at the 0.05 level. Women with primary schooling have the highest rates, and the difference between the two groups is significant; women with secondary or higher schooling are intermediate between the other groups, and have a rate that is not distinguishable at the 0.05 level from either of them. The higher numbers of premarital births among women who have been to school arise from higher age-specific rates, and not merely from greater exposure. What is more, the relationship is not a simple monotonic one, in which more school translates into a greater chance of premarital births, as might be expected if the tolerance for premarital childbearing were a modern social arrangement that women acquired with increased schooling. Instead, single women who attended secondary school bear somewhat fewer children than do single women who attended primary school, corresponding to the difference between them in overall fertility.

The differential distribution of non-marital births is consonant with data about premarital sex. Although the mean reported age at first sexual intercourse is higher among the educated than among those who have never been to school (not shown), women who have been to school are far more likely to report having had sex prior to marriage than are the uneducated. These data likely include some misreporting and should be used with caution; however, they lend credence to the interpretation of birth rates presented above. In addition, educated women appear to be more likely to abort an unintended pregnancy than their uneducated counterparts (see Johnson-Hanks, 2002), further suggesting that the differential birth rates reflect different rates of premarital conception. Table 5 shows the proportion of women of each age who report having had sex prior to their first marriage, by schooling status. The denominator includes both sexually active single women and married women who report having had intercourse prior to marriage.

TABLE 5.— PROPORTION OF WOMEN WHO REPORT HAVING HAD SEX PRIOR TO MARRIAGE, BY AGE AND LEVEL OF EDUCATION

Age	No schooling		Primary only		Secondary +	
	N	Proportion	N	Proportion	N	Proportion
15-19	185	0.054	493	0.452	618	0.547
20-24	204	0.074	357	0.597	592	0.792
25-29	215	0.065	308	0.581	401	0.800
30-34	193	0.119	260	0.581	256	0.766
35-39	186	0.124	257	0.572	177	0.718
40-44	182	0.137	186	0.495	98	0.643
45-49	166	0.157	130	0.492	37	0.730

Source: Cameroon DHS 1998.

The fact that women who have been to school have higher premarital age-specific fertility rates than do those who never attended school demonstrates that their lower fertility rates cannot be only the result of a new, rational antinatalism that they acquired in school. Nor can it be the case that they are merely more adept at managing contraception or navigating family planning bureaucracies. Any of these explanations for lower fertility among the educated would also, necessarily, predict them to have lower premarital fertility rates. Instead, this evidence suggests that the process of family formation is systematically different among educated to among uneducated women in Cameroon in terms of the timing, the order, and the final structure of families. An explanation of their differential reproductive rates will thus necessarily account for these systematic processes. To begin such an explanation, we now turn to a discussion of who the educated women are, and how they differ from those with no schooling.

IV. Other attributes of educated women

In Cameroon, women's schooling is closely related to a number of significant social factors. As we will see, the daughters of certain "communities of practice" (Lave and Wenger, 1991) enter school and remain in school to a much greater degree than the daughters of other communities. We can proxy these communities of practice using the DHS variables for religion and ethnicity. Cameroon, fondly called "Africa in miniature" by its citizens because of its diversity, is home to speakers of over 260 languages, and about as many named ethnic or descent groups. The 1998 DHS asked interview subjects to identify their primary ethnic affiliation. Using the classifications of Parker (1997), Gonen (1993), and Middleton and Rassam (1991), I coded these self-reported ethnic affiliations into three super-ordinate groups, which correspond approximately to the Cameroonian folk classification of Grassfielders, Bulu-Beti-Fang, and Nordistes. The data and groups are somewhat problematic because some Cameroonians associate with two or more ethnic groups, and also because there is some dissent regarding ethnic classification. Yet even given these problems—which should work against finding any significant relationship with ethnicity—the data show strong patterns linking ethnic community and schooling status.

In addition to ethnic variation, Cameroon is home to substantial religious variation. As a salient unit of social organization alongside ethnicity, these religious communities appear also to be significant in shaping families' options and choices regarding schooling for girls. Educated girls are overwhelmingly Catholic, and women who have never been to school are, in large part, Muslim. Some of this pattern could be anticipated on the basis of comparative data from across north, east, and west Africa indicating

the relative unwillingness of many African Muslim parents to send their daughters to school (Kazemi, 2000); however, some of the pattern is also unique to Cameroon, where schooling is not equally available to all. Until independence in 1960/1961, nearly all of the secondary schools in the country were Catholic; despite a massive governmental school-building campaign in the 1960s, Catholic schools remain strong, both numerically and in terms of reputation. The partial equation of secondary schooling with Catholic schooling in the Cameroonian popular imagination may lower barriers to school attendance for children of Catholic families, while raising them for non-Catholic, or at least non-Christian, children. In addition, government schools are not equally distributed; richer areas, more firmly embedded in the state apparatus, have a disproportionate share. These areas are largely Christian. Finally, religion and ethnicity co-vary in Cameroon, as they so often do.

Table 6 shows the number of women of each schooling status who belong to each of the three major religions and three large ethnic clusters. In brackets after each number is the proportion of those women who were married at the time of survey. This table indicates that when we talk about the behaviour of educated women in Cameroon, we are—in fact—talking about the behaviour of a very specific subgroup of people, distinguished not only by their education, but also by their ethnic and religious upbringing.

One of the results of the association between ethnicity, religion, and schooling is that patterns of marital and fertility events are similar regardless of which variable is used to classify them. Figure 2 shows the proportion of women never married at each age stratified in three ways: by schooling, religion, and ethnicity. (To avoid having too many lines on the graph, I have used just two categories for each variable.) Survival in the single state follows a nearly identical curve for Muslim, Biu-Mandara, and uneducated women, and the curves for Catholic, educated, and Bulu-Beti-Fang women also closely resemble one another. We move to fertility itself in Figure 3, which shows age-specific fertility stratified by the same three sets of categories. In Cameroon, educated women bear fewer children over their lifetime than uneducated women; however, the same is true for Catholic women and for Bulu-Beti-Fang women. Using data such as these, there is no intellectually defensible reason to attribute their reproductive practices to their schooling *per se*, rather than to their ethnic and religious rearing, or to the economic and political opportunities afforded them as a result of that rearing.

The argument for the simple causal force of education is further weakened by the data in Table 7, which presents the relative odds of ever having had a premarital birth (exponentiated coefficients from the logistic regression). The dependent variable is coded “1” for never-married mothers and for married women who report having borne a child prior to marriage; otherwise, it is coded “0”. The variables for schooling, religion and

TABLE 6. – PROPORTION CURRENTLY MARRIED BY LEVEL OF EDUCATION, RELIGION, AND ETHNICITY

Education	Catholic		Protestant		Muslim		Other		Total	
	N	%	N	%	N	%	N	%	N	%
No schooling	222	0.802	226	0.810	617	0.853	266	0.883	1,331	0.843
Primary only	865	0.496	789	0.565	251	0.733	86	0.628	1,991	0.559
Secondary +	1,127	0.302	905	0.327	94	0.447	53	0.358	2,179	0.320
Total	2,214	0.428	1,920	0.482	962	0.782	405	0.760	5,501	0.533
	Fulani/Biu-Mandara		Bamilike		Bulu-Beti-Fang		Other		Total	
No schooling	846	0.875	397	0.816	35	0.543	53	0.736	1,331	0.843
Primary only	169	0.639	1,046	0.606	571	0.485	205	0.459	1,991	0.559
Secondary +	54	0.407	1,001	0.353	1,017	0.276	107	0.383	2,179	0.320
Total	1,069	0.814	2,444	0.536	1,623	0.356	365	0.477	5,501	0.533

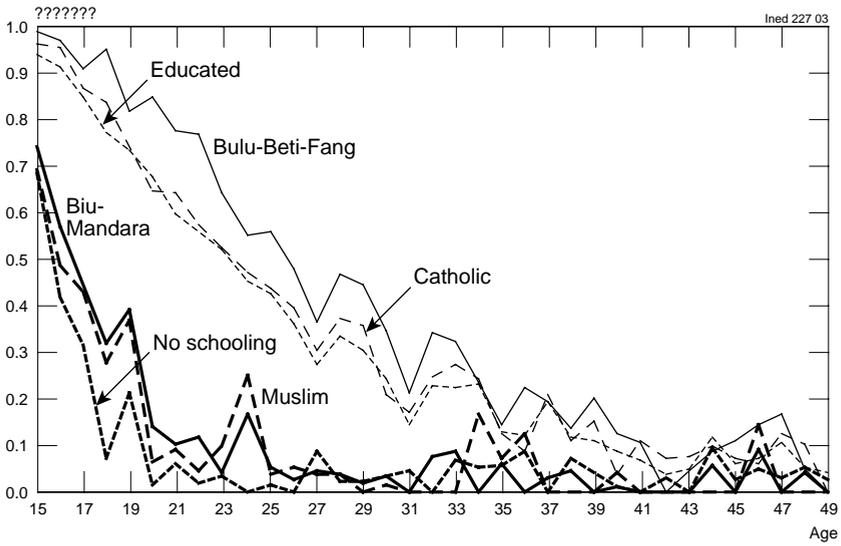


Figure 2.— Proportion of women still single by age, ethnicity, religion, and level of education

Source: Cameroon DHS 1998.

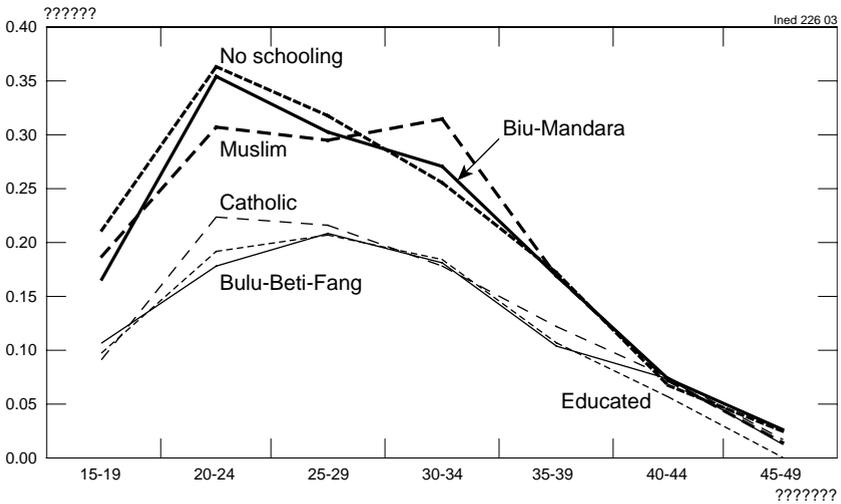


Figure 3.— Age-specific fertility rates by ethnicity, religion, and level of education

Source: Cameroon DHS 1998.

ethnicity are categorical, and the coefficients show the odds ratio of having had a premarital birth for women in the specified category relative to the reference category. “Age” and “age at marriage” are continuous variables: for every change of one unit (one year), the odds are multiplied by the ratio shown. For women who have never married, age at marriage is imputed as their age at survey. This imputation makes sense because the variable is intended to capture the duration of exposure to the risk of premarital childbearing⁽³⁾. The first three models include age, age at marriage, and one set of categorical variables, while column four shows the saturated model.

TABLE 7.— ODDS RATIO OF HAVING HAD A PREMARITAL BIRTH (LOGISTIC REGRESSIONS)

	Model 1	Model 2	Model 3	Model 4
Age	1.0051	1.0097*	1.0032	1.0018
Age at marriage with imputation	1.3023***	1.28982***	1.2871***	1.2957***
No schooling		Ref.		Ref.
Primary school only		3.3346***		1.6602**
Secondary school or more		2.7310***		1.2199
Catholic	Ref.			Ref.
Protestant	0.9975			1.0625
Muslim	0.5376***			1.3084
Other religion	0.3856***			0.7059
Fulani-Peuhl/Biu-Mandara			Ref.	Ref.
Bamileke			3.6554***	3.2122***
Bulu-Beti-Fang			7.3505***	6.6222***
Other ethnicity			7.5786***	6.3972***
Degrees of freedom	5	4	5	10
N	3847	3847	3847	3847
*** p > 0.001; ** p > 0.01; * p > 0.05. Source: Cameroon DHS 1998.				

In all four models, the coefficient of age at marriage (duration of exposure to the risk of a premarital birth) is greater than one and highly significant. For every year that she stayed single, a woman’s odds of having had a premarital birth increase by about 30%. In contrast, age shows little or no relationship with the probability of having had a premarital birth. The effects of schooling and religion depend on the inclusion of other categorical variables. Both have strong effects when only age and age at marriage are controlled, but smaller and less significant effects when schooling, religion, and ethnicity are all included in the model. In model 1, we observe that compared to Catholics, Muslims and women of other religions have a low risk of premarital births, whereas Protestants are indistinguishable from Catholics. In model 2 it is shown that women

⁽³⁾ The alternative to this imputation is to drop all never married women. Dropping them does not alter the direction of the findings, but—because it reduces the sample size—reduces some of the differences to statistical insignificance.

who attended school, regardless of level, have approximately three times the odds of the never-schooled of having had a premarital birth. The most educated have somewhat lower odds of a premarital birth than those who attended only primary school because the dependent variable conflates the probability of ever having borne any child and the probability that the child was born prior to marriage; when the analysis is limited to mothers, this effect mostly disappears (not shown).

Education and religion are both associated with the probability of having had a premarital birth when ethnicity is not controlled. Both of these effects dissolve, however, in the saturated model in column 4. Ethnicity, by contrast, has a large and relatively stable association with the probability of a premarital birth, regardless of whether education or other factors are controlled. Although the estimates in the saturated model are slightly smaller than those in the ethnicity-only model (column 3), they are still large and significantly different from one at the 0.001 level. All else being equal, a Bamileke woman is three and a half times as likely as a Fulani-Peuhl or Biu-Mandara woman to have had at least one child outside of marriage, and a Bulu-Beti-Fang woman is over six times as likely. This suggests that it is ethnicity, rather than education *per se*, that is most strongly responsible for the differential premarital birth rates shown in Table 4.

On the whole, educated girls in Cameroon are Bulu-Beti-Fang or Bamileke, Christian, urban or peri-urban, and from the south or west of the country. As Hammel (1990, p. 459) has argued, these attributes do not *cause* them to go to school or to follow particular reproductive trajectories; rather, they are associated with systems of thought and practice, structures of value, and typical aspirations. The co-variation of religion, ethnicity, and schooling is strong because it is the result of a coordinated set of social practices, grounded in differing goals and intentional frames. The ethnography of an earlier age called it simply “culture”. Contemporary ethnographers nearly uniformly reject the concept of bound, discrete cultures, emphasizing the exchanges, adaptations and collaborative innovations that have occurred across culture boundaries for millennia. Instead, current ethnographic research uses concepts like “repertoire” and “social practice”, which enable the analysis of shared aspirations and forms of action within communities at the same time as that of variation in intentions and action, innovation and uncertainty (Bledsoe, 2002; Comaroff and Comaroff, 1997; Guyer, 1993, 1996; Hanks, 2000). My argument here is that the co-variation of demographic variables is the result of these patterned repertoires of aspiration and expectation.

Comparing the communities in which parents usually educate their daughters and those in which they rarely do, a variety of political, economic, and social differences emerge. I will focus here on three social differences: tolerance of premarital and extramarital sex; concepts of self, independence, and individuality; and local understandings of what mar-

riage is and why one marries. These social factors are interrelated, so that exactly those communities that are most able and willing to send girls to school are also the most tolerant of low fertility, late marriage, and pre-marital childbearing. Although school itself clearly reinforces some of these values and expectations, the fact is that—on the whole—the girls who go to school already have them. To illustrate these differences, the next section of the article will turn to a discussion of two ethnic communities: the Bulu-Beti-Fang and the Biu-Mandara.

In the public imagination, the Cameroonian population includes three large categories—the Bulu-Beti-Fang; the Nordistes, including the Biu-Mandara; and the Grassfielders, typified by the Bamileke. The omission of the Bamileke and their neighbors from the analysis here deserves justification. The people of the Grassfields of western Cameroon are well-known in the ethnographic and historical literature for the institution of divine kingship, refined sculpture and other arts, and high agricultural productivity (see e.g. Barbier, 1977; Feldman-Savelsberg, 1999; Goheen, 1996; Kaberry, 1952). Conjoined with extensive labour migration (some estimate that half of all Bamileke are living outside the grassfields), this agricultural production has given them relative prosperity, but without equivalent sway in national politics. On certain parameters, the Bamileke fall between the two groups outlined here; in other ways the Bamileke are not in-between the extremes set out by the peoples of the Sahel and rain-forest, but are themselves the outliers. In terms of traditional political organization and marital form, the three groups cannot be lined up in a single progression: the differences are structural, not quantitative. An article of this length could not do justice to all three social systems. My decision to also exclude discussion of the Protestants, focusing on Catholics and Muslims, is related. Most of the Protestants are Bamileke, and the reasoning is the same. In addition, some proportion of the Protestants are members of the rapidly growing evangelical sects, whose characteristics are anecdotally quite different, but who cannot be identified in the DHS. Thus, I focus on the Biu-Mandara and the Bulu-Beti-Fang because they provide a maximal contrast on the specific parameters of interest here: school participation, marriage delay, and fertility. They are not Weberian “ideal types”, but perhaps approximate them, making the argument more transparent.

V. The Bulu-Beti-Fang and the Biu-Mandara

The term Bulu-Beti-Fang refers to a group of related segmentary descent groups who have inhabited the southern forests of Cameroon since the beginning of the nineteenth century. Of these, Beti is the largest, and “Beti” is often used colloquially to refer to the entire group. The term historically referred to a social status, rather than an ethnic affiliation, but a

century of censuses and surveys have used “Beti” as an ethnic label, and it is increasingly understood as such by those so called. The Beti are “nobles”: the word is the plural of *Nti*, Lord, as in *Nti Zamba*, Lord God. The concept of being Beti was and remains a prototype, of which the ideal case is a powerful, successful man who manages his own affairs and the affairs of others, even as the word is employed in government documents to refer to all people who speak languages classified as Beti (Eton, Ewondo, Manguissa, etc.), or born into a traditionally Beti lineage.

The twentieth-century history of the Bulu-Beti-Fang is one of increasingly institutionalized economic inequality and significant ideological change. Within four generations, the Beti have gone from slash-and-burn horticulture to incipient e-commerce, from household-based political organization to multi-party elections, from having no writing system to having upwards of 70% of the population literate in French. Following colonization in 1894, German administration instituted sedentary, centralized communities through taxation, physical violence, and the establishment of a local political hierarchy. At the same time, Roman Catholic missions and mission schools brought about one of the most rapid and complete conversions known in Africa (Laburthe-Tolra, 1981, especially p. 42). Following World War I, France administered southern Cameroon under a mandate from the League of Nations. Increased production for the cash economy reconfigured patterns of kinship and residence in this period, as rural men sought wives to work on their cocoa plantations. The profits from these enterprises were sometimes invested in formal education for children, who entered state employment. Thus, the institutions of state, church, and school together came to define a newly emergent, and Catholic, Beti elite (Bayart, 1989).

Independence in 1960/1961 brought both legal and economic changes. In the 1970s and early 1980s, the Cameroonian economy was strong, benefiting Beti communities with falling unemployment, new buildings, and extensive European imports. But in 1987, the value of Cameroonian exports collapsed, falling by nearly half within a year (Asuagbor, 1994, p. 41). This began *la crise*, a disintegration of socio-economic order that persisted for the next decade. Civil service salaries were cut twice, and the currency was devalued by 50% in 1992. In the 1990s, everyday life was extremely uncertain: salaries were paid late if at all; even in the capital, water, electricity and telephones functioned erratically; medical facilities were understaffed with few supplies. Widespread economic hardship, combined with equally widespread corruption, left many people distressed about the present and fearful for the future (see also Mbembe and Roitman, 1995). The dramatic social, political, and economic transformations of the last century have partially altered the repertoires of what people want out of life, believe to be feasible, fear, or work to attain, as we will see below.

Like Bulu-Beti-Fang, the classification Biu-Mandara was coined relatively recently to refer to a set of related ethnic groups, here including the Mandara, Mafa, Mada, and Mouyeng, among others. Sometimes described as people of the mountains, the Biu-Mandara have inhabited the Mandara mountains for generations; their traditional economic life relied on millet cultivation, and their social organization was patrilineal and virilocal. Some are Muslim, others practice indigenous religions called “animisme” in the DHS. More than the south of the country, northern Cameroon has known centuries of multi-ethnic politics; the people called Biu-Mandara in the census have lived alongside, in dialogue with, and often politically subjected to Fulbe, Peuhl, and others (see Burnham, 1996, p. 9-42). Over the last half-century, the different groups collectively called Biu-Mandara have descended into the plains and taken up cotton cultivation. Compared to the Beti, they have been marginalized by the state, excluded from government employment, and largely confined to poor quality, arid land far from major markets. Thus, the consequences for the Biu-Mandara of *la crise* have been different to those for the Bulu-Beti-Fang. Already deprived of most of the benefits of trade and aid in the first twenty years of independence, the Biu-Mandara lost less when the CFA collapsed. At the same time, however, the lack of roads, schools, electricity and water in the north remains. Numerous authors describe their current socio-economic situation as precarious, and a significant proportion of the ethnographic work on the different Biu-Mandara communities focuses on food security, political conflict, and access to land (e.g. van den Berg, 1997; Richard, 1977). Growing up Beti, a young woman has a very different set of expectations about her future life to those of a young woman among the Mafa, Mada, or Mouyeng. These differences relate both to her schooling and to her entry into marriage and motherhood.

VI. Premarital and extramarital sex

Attitudes and practices around sexuality, particularly premarital sexuality, differ significantly in the two communities. The relative sexual liberty of unmarried men and women is perhaps the single aspect of Beti social organization most widely noted throughout the ethnographic literature. Thus, Alexandre and Binet speak of the “sexual freedom” of adolescent girls (1958, p. 52), and Laburthe-Tolra refers to “the famous sexual liberty of the ‘Yaunde’ that so struck the first observers” (1981, p. 234). Perhaps the clearest statement is from the seminal work of Tesson, who writes that between puberty and marriage

“free love reigns in the boldest sense of the word. The young woman may give her favour without constraint to whomever and whenever she wishes, and must only hold herself to the religious regulations that forbid sexual intercourse during the day, and to the social ones that forbid it between

blood relatives. Otherwise there are no boundaries.” (Tessman, 1913, vol. II, p. 253)

The degree to which the representations of Tessman and others are accurate for the pre-colonial period has been hotly contested and highly politicized (see Ombolo, 1990; Vincent, 1976). However, regarding the contemporary situation there is little debate. In the ethnography of the past two decades, it is clear that many Beti consider regular sexual activity an important element of normal adolescence, almost completely independent of marriage (e.g. Laburthe-Tolra, 1981, p. 236ff). Sexuality is accepted as an important component of physical well-being, to the degree that many consider long-term sexual abstinence to be harmful to health. As several women quipped, “the body needs many things”. Although abortion is sometimes practiced to avert unintended pregnancies resulting from premarital sex, even premarital births are relatively accepted as part of the normal order of things in Beti communities.

Biu-Mandara social practices regarding premarital sex could hardly be more different. First, the topic draws much less ethnographic attention than does sexuality among the Bulu-Beti-Fang, a silence instructive by way of comparison. Second, the few published discussions of premarital sexuality among the Biu-Mandara are unanimous: women should be virgins at marriage, premarital childbearing is unacceptable and the consequences for defiance are severe. Three brief examples demonstrate this point (see also Lembezat, 1961, p. 46):

“Sexual games are prohibited by the Mada and Mouyeng societies... The rigor of the sanctions applied in the case of infraction underlines the esteem that the two societies have for virginity. The young girl, reclined, arms and legs in the shape of a cross, and firmly attached to stakes, undergoes the burning of hot pepper placed on the eyes and the pelvic region.” (Richard, 1977, pp. 180-181).

“The child born outside of marriage practically does not exist... because at the appearance of a pregnancy, the girl is driven away. She must leave the highlands and find refuge in the plains, as far away as possible, and never return, not even for ordinary visits.” (Mouchet, 1948, p. 116).

“Sexual abstinence, which leads up to marriage, is equivalent to making sexuality a socially privileged function of marriage.” (Yaya-Wane, 1971, quoted in Richard, 1977, p. 213).

This emphatic rejection of premarital sexuality is enforced through normative early marriage, rigorous supervision of young women, and strong negative sanctions in the case of infraction. Thus, young Biu-Mandara women have strong incentives to avoid premarital sexuality and childbearing, incentives that are simply not present in the social system of the Beti.

VII. Selfhood, individuality, and independence

Biu-Mandara and Bulu-Beti-Fang practices regarding sexuality are almost entirely different. In their concepts of selfhood and independence, however, the two communities have significant—if partial—communalities. Ethnographic descriptions of both the Bulu-Beti-Fang and the Biu-Mandara emphasize the importance of “independence” in the respective communities. But what “independence” means, to whom it may be attributed, and how it is employed differ. These differences have consequences for reproductive practice.

Among the Bulu-Beti-Fang, the value of independence is grounded in the notion that each person is a unique composition of histories, aptitudes, and experiences, and that each person has a unique destiny. The life-long challenge is to recognize one’s own path, and to follow it faithfully. Guyer (1996, p. 10) notes that among the Beti it is preferable to be a thief than to be a *zeze mot*, a nobody. Many domains of experience or action are interpreted simply as matter of individual preference or character, rather than in reference to some established code or norm. Thus, the common saying, “C’est tout un chacun,” understood as meaning “to each his own”. (For additional discussions, see Guyer, 1993, 1996; Laburthe-Tolra, 1977; Tessman, 1913, vol. 2.) Among the Beti, then, it is accepted or even encouraged for different people to fulfil their human destiny in different ways. The “echoes of conversation with kin and neighbors” (Watkins, 1990, p. 242) may weigh just as heavily, but the repertoires of action that those evaluative clouds of conversation would countenance are more varied.

In order to realize her or his own path, many Bulu-Beti-Fang seek out continued training or study, both formal and informal, academic, professional, religious, or otherwise. The idea that each person is called to a unique path, and that the actualization of that path relies on constant study, is widespread. As the Beti sociologist Mbala Owono explains:

“Everything occurs here as if training consisted solely of the recommendation ‘become who you are’ ... For the Beti, the grand principle that presides over training expresses itself in the following terms: ‘Owog o na enyin, ve menken’, which can be translated as: To live is to devote oneself to the acquisition of the means of vitalization. It is to renew oneself, to adapt.” (1982, p. 122).

This arc of related concepts from independence to advanced training, along with a set of institutional and economic factors, underlies the high rates of school attendance among the Beti. At the same time, these related principles underlie other forms of social action, as the motive for specific behaviour, as a resource that can be used to justify behaviour to others, and as one of the frameworks with which others will evaluate the behaviour. Thus, underlying principles may guide social action even if people do not conform to them all the time, or when their conformity is partial, contested, or ambiguous.

Independence is also given central attention in ethnographic descriptions of the Biu-Mandara. That said, its form and basis differ substantially from that of the south. The prototypical image of women's independence in these works is that of the dissatisfied wife, leaving her husband's compound, perhaps her co-wife or co-wives, and her children, to join that of another man who offers her something better. There is not a sense that her actions conform to a destined path that she hopes to succeed in actualizing, but rather that a person has the right to follow her "own head" (see van den Berg, 1997, *passim*). What is portrayed is the freedom to follow one's own caprice, within the limits allowed by religious interdiction, moral values, and sacred obligation (Richard, 1977, p. 208). This is a very different notion of independence from that of the Beti, in which individuality in life choices is close to a moral obligation, and where such individuality assumes the form of life-long training and study.

VIII. The meaning of marriage

We have seen that the Bulu-Beti-Fang and the Biu-Mandara differ in reference to their concepts and practices around premarital sexuality and selfhood. Next we turn to the role of marriage in women's lives in the two communities. The ethnographic literature regarding the Biu-Mandara emphasizes that first marriages are early and nearly universal, and that divorce and rapid remarriage are relatively common (Burnham, 1996; Podlewski, 1966). By contrast, marriage among the Bulu-Beti-Fang has tended to be late (except during the early decades of the French mandate: Guyer, personal communication), but rarely interrupted once entered. DHS data (not shown) generally support these ethnographic generalizations. These different patterns of marital status by age suggest that marriage means something different in the two communities: women's participation in marriage plays different functional roles.

Among the Beti, the pattern of late marriage is part and parcel of the concept that young people must come to know themselves, and that everyone has a unique character that will be revealed through experimentation and hard work. Rapid marriages are viewed with suspicion, since the partners will not have had time to observe one another, in order to know whether they will be compatible. As one of my informants explained:

"Marriages of two months — you meet someone and after two months you get married — that never lasts. At least five years are necessary for me, but the people who are in too much of a hurry could [marry] in three years. But during three years someone could hide his true face from you. You have to live for five years, then you will know each other well. You will know who is who." (Field tape transcript #13b, lines 275-280).

Marriage among the contemporary Bulu-Beti-Fang includes up to five ritual transitions: the presentation, the announcement of the engage-

ment, the bridewealth, the civil ceremony, and the nuptial mass. Couples may begin living together at any time, and many couples will never undergo all five events. That said, the transitions — especially the last three — are not easily reversed, and it is rare for a Beti woman whose bridewealth marriage ends to experience a second bridewealth marriage. Although it would not be accurate to say that couples marry for life, that is certainly the ideal toward which most strive. This relates directly to the relative tolerance of premarital childbearing, as a premarital birth is more easily incorporated into this system of social valuation than is a hasty or ill-advised marriage to an unsuitable man with whom one has conceived a child. For many Beti, marriage is the prerequisite neither for sex nor for childbearing.

The economic role of marriage among the Beti is ambiguous. In rural areas, women generally — although not always — gain access to fields through their husbands, placing a high economic cost on celibacy. However, Beti women's economic dependence is only partial. Other than clearing new fields, women generally perform most agricultural labour in Beti villages; thus, a household of women can support itself. In the city, where there are opportunities to trade or enter the paid labour market, women are even more able to make do alone. Beti women often do gain financially from marriage, and economic concerns are not alien to their thinking about when or whom to marry; however, marriage is not an economic necessity. Essential neither financially nor for reproduction, marriage among contemporary Beti women is something you do for love.

By contrast, marriage appears to be both economically and socially mandatory among the Biu-Mandara. In addition to legitimating childbearing, as seen above, it offers Biu-Mandara women access to necessary financial and productive resources. Dry millet horticulture requires male labour more than does the manioc cultivation of the south, and Biu-Mandara men play a more active role in maintaining fields and crops. Biu-Mandara women have less access to paid labour markets, and there is less tolerance of their participation in them. An unmarried woman has little place — either economically or socially — in Biu-Mandara society. When marriages end, both partners enter new ones. As the gate to legitimate childbearing and an economic necessity, marriage is a totalizing institution that coordinates Biu-Mandara life. The fact that the uneducated Biu-Mandara woman bears many children and bears them almost exclusively within marriage is not the direct and unproblematic result of her lack of education; her socialization and social environment also matter significantly. Indeed, the fact that a substantial proportion of the Cameroonian women who have never been to school were raised as Biu-Mandara contributes significantly to understanding the motivation of their reproductive practices.

Conclusion

Growing up Beti, a young woman develops a specific set of concepts, practices, hopes, and expectations for her future. She expects that sex will be part of her adolescent life, prior to her marriage. She looks forward to developing her individual character, and learning to become her unique self. She expects to continue her training, whether in or out of school. She hopes to marry for life — perhaps during mass in one of the grand churches built in the beginning of the last century. She may well attend secondary school, and can hope for a job in the paid labour market. A young Biu-Mandara woman, too, develops a set of concepts, practices, and expectations, although ones quite different from her Beti counterpart. She knows that her adult life will be lived primarily in marriage, although not necessarily to only one man. Within marriage, she will bear as many children as God gives her, and her welfare relies in part on God's generosity in giving children. She will most likely not go to school, or will leave at an early age. These structured patterns of expectation and action, aspects of what Bourdieu (1990) called the *habitus*, are engrained through daily repetition. In part at least, they underlie the demographic patterns of marriage and childbearing observed in the DHS.

There are many reasons — political, economic, and social — why Bulu-Beti-Fang girls usually attend school and Biu-Mandara girls do not. Once in school, the rest of their lives and training do not dissolve; educated and uneducated Cameroonian women are not otherwise interchangeable. The fact that educated women have lower age-specific fertility rates and higher premarital fertility rates than the uneducated is not merely the result of their schooling. Rather, their reproductive practices are part of the structured sets of expectations and actions generated by the distinct communities of practice in which they participate. School is only one of the sites of cultural production that educated women share and in which they have developed their repertoires of social practice. The relevant research question is thus not merely why educated women bear so few children or bear them late, but why women from certain communities do, and what is the place of schooling in the aspirations and intentional frames of the social actors from those communities. Education certainly influences what women expect from their lives and what they can reasonably hope for. However, it does so in conjunction with other sources of influence, some equally strong. In a context as complicated and variable as contemporary Cameroon, education is not a sufficient explanation of the observed differences.

This article has argued that an adequate account of African fertility will need to address not only its statistical patterns, but also the socially meaningful processes that underlie it. This argument, of course, is not new. The relationship between social processes and demographic indices fascinated Quetelet and Halbwachs, and undergirds recent work in cultural

demography and the anthropology of population (see especially Bledsoe, 2002; Greenhalgh, 1995; Hertrich, 1996). Ultimately, demographic statistics are the residuals of social practice, and to understand them, we must direct our attention to their social causes.

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JOHNSON-HANKS Jennifer.— Education, Ethnicity, and Reproductive Practice in Cameroon

It is often observed that educated women have lower birth rates than do the less educated, inviting a causal interpretation. However, educated women also differ from those who have never attended school in a variety of other ways: the two factors are multiply related. This article analyzes the relationship between schooling and fertility in contemporary Cameroon as both a statistical and a social phenomenon, using data from the 1998 Cameroon DHS alongside ethnographic field data collected by the author. These data show that educated Cameroonian women marry later and bear fewer children than their uneducated counterparts, in keeping with patterns established comparatively. However, educated women have *higher* annual premarital fertility rates than do the uneducated, in opposition to the predictions of most causal models. The article argues that these statistical patterns result from the high degree of selection into school. Educated girls come from communities that are more tolerant of premarital sex, place greater emphasis on the importance of developing individual character, and accord a less central role to marriage in women's lives. Together, these social differences matter as much for reproductive outcomes as does schooling.