



Policy and Research Paper N°12

Men, Reproduction and Fatherhood
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Introduction

Policy & Research Papers are primarily directed to policy makers at all levels. They should also be of interest to the educated public and to the academic community. The policy monographs give, in simple non-technical language, a synthetic overview of the main policy implications identified by the Committees and Working Groups. The contents are therefore strictly based on the papers and discussions of these seminars. For ease of reading no specific references to individual papers is given in the text. However the programme of the seminar and a listing of all the papers presented is given at the end of the monograph.

This policy monograph is based on the seminar on 'Male Fertility in the Era of Fertility Decline' organised by the IUSSP Scientific Committee on Anthropological Demography, in collaboration with El Colegio de Mexico, the Sociedad Mexicana de Demografia and the University of Zacatecas, and with the support of El Gobierno del Estado de Zacatecas, held in Zacatecas, Mexico from 13-16 November 1995.

Background

Knowledge of the motives and constraints that affect both men's and women's fertility-related behaviours is essential for a full understanding of the fertility dynamics of populations. In practical terms, understanding men's thoughts and feelings about engendering children is crucial to finding incentives for men to participate or countenance their wives' participation in family planning. Yet, to date, social scientists and policy makers interested in fertility have devoted almost all of their attention to women, and very little to men.

The 1994 World Population Conference endorsed a new model for population initiatives which adds another dimension to the importance of addressing male fertility. Its Action Program, endorsed by a consensus of 183 countries, charges programmes with advancing 'the right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so'. The document reiterates the importance of reducing population growth rates, but encourages programmes to pursue this traditional goal through increasing reproductive autonomy rather than outright advocacy. A fund of evidence supports the hypothesis that helping men and women achieve more control over their fertility will result in lower birth rates. At the same time, a widespread impression and some data suggest that men want more children than women. For example, in a recent survey in 3 sub-Saharan countries, both sexes wanted to lower their fertility, but the male respondents' ideal family size was 1 or 2 children larger than the women's. The gap between the two sexes' fertility goals raises some thorny issues. What criteria can programmes use to evaluate their success in promoting reproductive autonomy for every individual when men and women have discordant goals? And, how much will men's desires for larger families limit the amount of fertility decline that can reasonably be expected to occur as a by-product of reproductive autonomy?

Men have at their disposal two alternative strategies for achieving reproductive success - that is, engendering offspring that survive long enough to procreate themselves. Some have only a few children and nurture them assiduously to make sure they succeed. Others try to have so many children that the sheer numerical odds favour at least one's surviving to reproduce himself or herself, even with little or no paternal nurturing. Some experts believe that contemporary socio-economic changes are diminishing men's desire and ability to invest the necessary time and energy to pursue the former, careful-nurturing strategy. If these experts are right, the potential consequences are enormous for men, women, children and the viability of many fundamental social structures.

With this background, a panel of demographers, anthropologists, historians and experts in public policy convened at the invitation of the Committee of Anthropological Demography of the International Union of the Scientific Study of Population. Over the course of 4 days, the panellists reviewed the current state of knowledge and presented new study results bearing on male fertility and fatherhood. This essay recapitulates some of the major themes of their discussion, with special attention to implications for policy and research.

Male Fertility and its Determinants

Most men are probably physiologically capable of engendering children at least several times per month from puberty until late in life. Some men beget hundreds. Yet, world-wide, the average man reproduces fewer than four times in his lifetime. In countries with developed market economies, the figure is less than two.

Men's fertility varies so greatly, and most men realise only a small fraction of their biological procreative potential, in large part because of the linkage of male and female fertility. While a very small proportion of the world's men can increase their progeny via women who select their sperm for artificial insemination, the overwhelming majority cannot generate any more children than their sexual partners conceive and carry. Box 3 discusses other comparisons between male and female fertility.

Cultural practices that govern the availability of reproductive partnerships are key determinants of which men reproduce and how many children they have. Marriage rules explicitly serve this function. In monogamous societies, a typical man has access to the child-bearing capacity of one woman at a time. A man who follows the normative path stays with one wife throughout his lifetime and stops procreating when she is no longer able to bear children. The maximum number of procreations for a robust, resolute and lucky monogamous man would be the issue of perhaps 35 pregnancies, as many as his partner has time to complete during the 3 decades or so from menarche to menopause. For monogamous populations, male fertility is unlikely to average more than 11 children per man, corresponding to the highest number of children per woman ever observed in any general population. In polygamous societies, in contrast, a man can father children in much quicker succession, since he does not need to wait for one wife to finish her pregnancy and period of postpartum infertility before impregnating another. In addition, he can maintain fecund wives throughout his older years. A recent study in 9 nations in sub-Saharan Africa confirmed that polygynous men in the age group 45-54 years averaged 3 or 4 more children than their monogamous counterparts.

Box 3: Comparing Male and Female Fertility

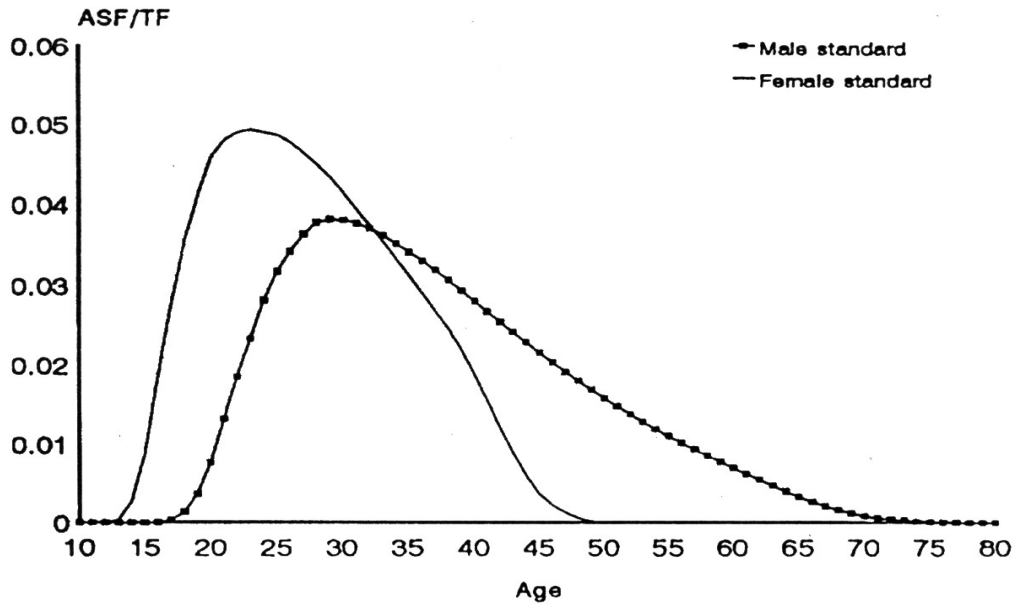
Every child has exactly one biological father and one mother, yet male and female fertility rates differ. Counterintuitive though this may seem, it is easily explained. The number of men and women is highly unlikely to be equal in any natural population. Therefore, dividing the births in the population by the number of females will almost always produce a different rate than dividing those births by the number of males. In most populations, men in their reproductive ages outnumber women in their reproductive ages, and men's fertility is correspondingly lower than female.

Men typically start their reproductive careers later and finish them later than women. In monogamous populations, the average man is 2 years older than the woman with whom he has his first child; in polygamous populations the differential can be considerably greater. Men's physiological capacity to impregnate lasts longer than women's ability to conceive - in fact, while most women's reproductive careers end by age 45-50, no firm limit to male fecundity has been established. Figure 1 compares estimates of male and female age-specific fertility rates in a hypothetical population that does not use any birth control. The greater temporal extension of male reproductive cohorts creates difficulties for the direct comparison of time trends in fertility between men and women.

Insofar as marriage is a dominant link between male and female fertility, the two sexes' rates tend to be more similar in countries where lifetime monogamy is most strictly observed. Figure 2 shows the actual observed male and female age-related fertility curves in France in 1974. They are very similar, but differ in 3 ways. The men's is displaced a few years to the right of the women's, since the average man married a woman who was a few years younger than he. The men's never rises quite as high as the women's, because there were more men than women in the population. Finally, the men's curve tapers off more slowly than the women's, because a portion of men extended their childbearing into later ages through alliances with women who were more than a few years younger than themselves. The two sexes' age-related fertility curves should be much more variable in polygynous societies and where larger portions of births take place outside of legitimized relationships.

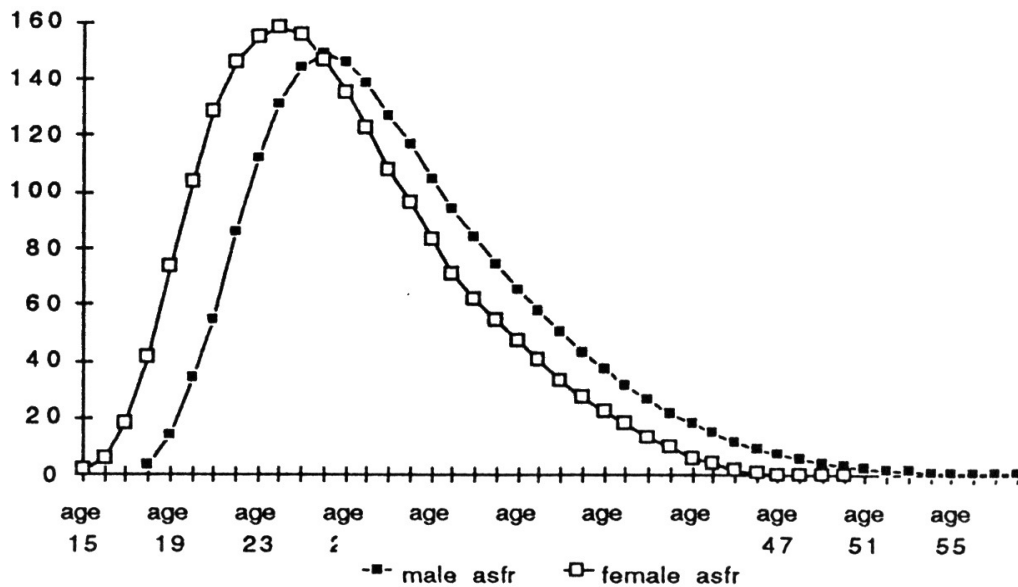
Recent trends point to a potential for increasing separation of male and female fertility rates in the West. First, divorce and remarriage have been rising in the United States and Western Europe for decades (Spain is an exception). In effect, Western men who replace their wives are practising a form of polygyny which increases their lifetime access to female child-bearing potential. Second, a looming number of children are being born outside of established relationships. Currently in Sweden, half of all births are to unmarried mothers.

FIGURE 1: A COMPARISON OF MALE AND FEMALE FERTILITY RATES WITHOUT BIRTH CONTROL



Source: W.J. Paget, I.M. Timaeus (1994). *A relational Gompertz Model of male fertility development and assessment. Population Studies* 48(2): 333-340.

FIGURE 2: MALE AND FEMALE AGE-SPECIFIC FERTILITY RATES, FRANCE 1974



Source: N. Brouard. *Evolution de la fécondité masculine depuis le début du siècle. Population* 62(6):1123-1145.

Within monogamous or polygynous societies, a variety of additional factors can affect individual men's access to wives and reproductive partners. An important one is the ratio of men to women in the reproductive ages. Males and females enter and leave populations at different rates by being born in, dying out and migrating to and from. The higher the male-to-female ratio is, the larger the portion of men who will fail to find wives and die childless, bringing down the overall average fertility rate. A dramatic illustration of the relation between the sex ratio and male fertility is provided by French experience during and after World War I. Battlefield deaths, privation and disease (especially an influenza pandemic) increased both men's and women's mortality. Because men died in greater proportion than women, men who survived had an easier time finding reproductive partners than before the war. As a result, the number of new births declined less rapidly than the male population, and male fertility rose sharply, from about 1.5 children per man in 1917 to nearly 3.5 in 1921. Today, migration is affecting adult sex ratios in many areas of the world. The resultant impact on fertility will be mediated by the extent to which migrants and indigenous residents consider each other to be desirable or undesirable marriage partners.

Men's chances of finding reproductive partners also depend upon their wealth and social status. Studies of male fertility in sub-Saharan Africa have repeatedly shown that more wealth and prestige correlated with a higher prevalence of polygamy and more children. A recent survey demonstrated the persistence of a U-shaped relationship between income and fertility in France, with sharply dropping rates of reproduction at both ends of the income spectrum. The obstacles that poverty and low status pose to finding a reproductive partner account for some of the reduced procreative activity at the low end.

Were men's access to fecund partners the sole factor affecting the volume and distribution of their fertility, any polygynous society would logically have a higher fertility rate than any monogamous one. This has not always been the case, however. For example, Chinese noblemen of the Qing Dynasty (1700 to 1900) took several wives and continued to procreate into old age but engendered an average of only 7 children apiece. In the West, meanwhile, monogamous men were averaging 8 to 10 offspring and polygynous men 15 to 25. Some factor other than the degree of opportunity to form reproductive partnerships is also necessary to explain why men's fertility is lower now than 50 years ago in almost every country on earth, both monogamous and polygynous. (In fact, the fertility declines during this period have been documented almost exclusively through surveys of women. However, they are generally of such magnitude that, given the linkage between the sexes' fertility rates, they implicitly establish a concomitant fall in men's fertility.)

Men's fertility performance is also shaped by the strength of their desire for children. The previously mentioned falling off of fertility at the high as well as the low end of the French income spectrum is one reflection of this. Compared to their middle-class counterparts, some lower-class Frenchmen are likely to want fewer children because the costs of child-rearing represent larger portions of their incomes. Having an additional child is more likely to compromise their ability to sustain a tolerable life style. In contrast, some well-to-do Frenchmen may owe their superior incomes to the fact that they are disinterested in children, and this leaves them more time and energy free to pursue income-generating opportunities. Alternatively, some upper-class Frenchman may find that the cost of raising a child in a fashion which they believe appropriate - enrolling the child in private schools, for example - may even require greater proportionate investments than are made by the middle class.

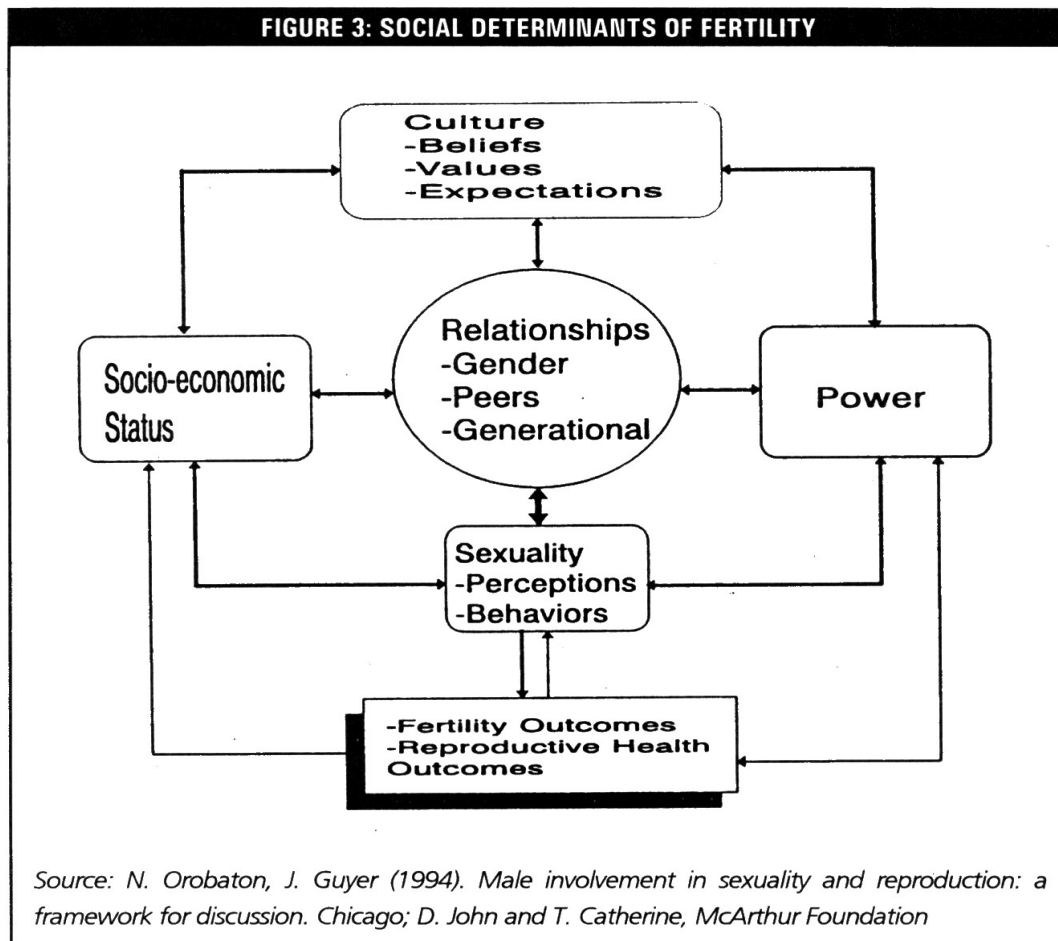
The next section discusses men's reproductive motives. The following two sections address two other indispensable components for a comprehensive account of men's fertility dynamics. These are men's abilities to obtain their partners' concurrence in their fertility desires, and the degrees to which men's timing of their coital activities and their use of contraception promotes or inhibits achievement of their desires.

Men's Motives for Reproducing

Men, like all living creatures, possess a biological drive to perpetuate their genes through offspring. Motives that arise out of social relationships shape the expression of this drive, and are more plausible targets for policy interventions than the drive itself. A schematic representation of the sociocultural influences on men's fertility motives is presented in Figure 3.

Men's relationships to women are one fundamental source of their desires for children. Thus in Spain, where young people commonly continue to live with their parents well into young adulthood, couples generally make simultaneous decisions to marry, cohabit and conceive. In France, cohabitation often precedes marriage and conception, but the latter two usually take place in quick succession. These are widespread patterns. In some cases, men and women conceive together in order to reify their loving connections in the flesh of their children. In others, men engender children to advance, stabilise or rescue relationships with women. A focus group of physicians recently reported that some men in Northern Nigeria engendered higher-order children in order to distract their wives' attention from affairs they were pursuing with other women.

Men sometimes procreate to accommodate their wives' reproductive desires. That is the simplest interpretation of recent findings from a study of French men's fertility in second or higher-order marriages. The number of children the man brought to the new household from his previous relationships made little difference to whether or not he and his wife had another child. The decisive difference was whether or not the wife brought children. Of interest, the researchers concluded that, 'Men identify less with fatherhood than women do with motherhood'. Another kind of accommodation operates in some polygamous relationships. Here, wives compete for the status that having sons and daughters brings. Men may father children in part to distribute prestige - to elevate a preferred wife, placate another wife or prevent jealousy. This response to wives' competition has been advanced as one reason why polygynous men are more fertile than monogamous in Sub-Saharan Africa.



Men's relationships with women also have power aspects that can motivate men to engender children. The need to manage women is a fundamental tenet of patriarchy, undoubtedly attached to men's instinct to control their access to sources of pleasure. In daily life, the elaborate cultural complex called macho stresses this objective particularly strongly. Impregnating a woman can be a means of asserting emotional or physical sway over her. In wartime, as the recent mass rapes in Bosnia and Rwanda attest, men's use of women's fertility to impose dominance over them can take horrific forms. In these instances, the perpetrators, soldiers of winning armies, established an intimate species of occupation in the wombs of their victims who conceived. These activities also represent a competitive motive for male fertility. The rapists made sure that their enemies could not reproduce with these women until the imposed pregnancies were completed or terminated.

Among men's fertility motives are some that pertain to the potential uses of children. One impetus, albeit better documented in works of literature than scientific surveys, is the desire to reap the emotional rewards of parenting. Men want children, too, for what children can do for them. Children's services can be religious, as in Asian cultures where sons alone can perform the funeral rites that guarantee fathers a good afterlife. They are often economic. In agricultural societies, children generally start helping with tasks at a very young age. Yoruba fathers, for example, traditionally gave small hoes to their sons when they were not far past toddlerhood. At first, a boy's task was to make 1 pile for every 10 his father made. Girls were similarly trained to help their mothers with household tasks. Especially in areas with comparatively few communal guarantees of welfare assistance for the

elderly, men sire children in hopes of securing an old age free of loneliness and want. Children's potential effectiveness, economically and in terms of many other functions, improves as they age and mature.

Besides their relationships with women and their anticipation of benefits from children, men experience group pressures and incentives that motivate them to reproduce. In many societies, although not all, paternity is an important condition for obtaining the status and prerogatives of full manhood. Among the Ashanti people of Ghana, for example, men without children are scorned and called 'wax penis'. Formerly, Ashanti who died childless might be buried with thorns driven into the soles of their feet, and with curses bidding them never to return to the world to live again so uselessly. No such rituals occur in the United States. However, the Ashanti attitudes will seem familiar to American men who complain of feeling unsexed and devalued in others' eyes because of childlessness.

Families, clans, nations, races, religions and other social groups promote members' reproduction in order to be perpetuated themselves. The major monotheistic religions, for example, encourage believers, in the words of the Old Testament, to 'go forth and multiply'. The conceptual fusion of individual and group reproduction finds expression in various cultural beliefs and practices. Thus, the Ashanti, the Yoruba of Nigeria and other West African religious societies say that children inherit spiritual essence from ancestors. Among the Yoruba, adults scrutinise each new infant to determine which deceased ancestor he or she most resembles. Once they settle upon a predominant likeness, the child receives that ancestor's name and becomes subject to the same taboos. In this way, the members of each generation preserve the array of taboos, or special links to nature, which lie near the core of the group's identity and the source of its hope for continuance.

Family and other group pressures for men to reproduce can operate in many ways simultaneously, as the Coastal Boiken of Papua, New Guinea, can illustrate. As happens the world over, Boiken men who have sons will urge them to produce sons in turn, in order that the grandchildren should continue some aspect of the grandfather's selfhood into the third generation. Men also want their brothers-in-law to sire sons upon their sisters, for quite different reasons. Sisters' sons represent economic opportunities for their mothers' brothers, who have a customary right to claim a return of double anything they provide to the child.

Larger social groups' pronatalism often springs from the idea that more people means more power over, or protection from, other groups. Leaders with dreams of conquest have often exhorted their subjects and followers to multiply. The Nazi regime (1933-1945) urged German couples to create the manpower to enable Germany to conquer and administer other countries. The Francoist dictatorship in Spain promoted a patriarchal form of the family in which men were to participate in the economy and rule the household while women stayed home and raised children. Although the Spanish population maintained this family form, however, they did not produce the population increases that the regime wanted. Instead, by delaying marriage to higher ages, they lowered fertility throughout the era.

Factions within societies, as well as societies themselves, may convey messages to reproduce for group competitive advantage. In a classic study of Swiss smallholding families in the 19th century, the author concluded that men wanted children in part to provide themselves with political allies in a one-man, one-vote democracy. Similarly, indigenous Europeans worry today that unless they increase their birth rates, they may become minorities within their traditional land areas. Some white citizens of the United States express a similar unease, as it appears that in the near future they will be outnumbered by other groups with faster growth rates due to immigration and higher fertility. On both continents, the fears encompass loss of electoral majorities and political power, disadvantage in social and economic transactions that involve knowledge of an unfamiliar cultural or language, and dismantling of their familiar moral and cultural norms. Some researchers have remarked that men seem more susceptible than women to such ideological motives for reproduction.

Men's group-related procreative motives shift from era to era - in times of rapid social transition, from decade to decade. In Papua, New Guinea, the men of the Coastal Boiken today encounter a very different context for reproduction than their elders did a couple of decades ago. Population decline, many conversions to Christianity and a new cash economy have rent the fabric of their society's traditional social roles and relationships. So much did each individual's sense of self formerly consist of his or her place in that fabric that the question now arises: What does a man reproduce when he reproduces?

As the illustrative examples throughout this section may suggest, a particular motive for procreation influences men of different groups more or less strongly depending on their contrasting ways of life and circumstances. A married monogamous man, for example, is less likely than his polygynous counterpart to consider, when deciding whether or not to try to initiate a pregnancy, what the effect of the act will be on his relations with one or more other sexual partners. A well-to-do urban man will probably not think of having a child as a way to improve his economic possibilities in the short run, but a poor agricultural worker may well reach this conclusion.

This sketch of men's fertility motives is necessarily incomplete and qualitative. A quantitative analysis of the impacts of the respective motives on fertility would be required for many purposes of policy guidance and programme design. This cannot yet be provided, however, mainly because male fertility rates have generally never been tallied in detail. Box 4 reviews the technical reasons why. The remainder of this section describes a concept - the life course - that should prove very useful in analysing men's fertility motivations when rates become available.

Box 4: Technical difficulties of male fertility surveys

To date, social scientists and policy makers concerned with fertility have devoted almost all of their attention to women, and very little to men. Their reasons have been pragmatic. Men's reports of their own fertility have considerable built-in potential for error. First, a man can occasion a birth without being aware of it - something that would be highly unusual for a woman. In addition, a man may wrongly believe that a child is his when it was really sired by another man. In one study using DNA testing, a group of Michigan men were found to be genetically unrelated to between 2% and 10% of the children they supposed to be their own progeny. To the extent that men are mistaken about how many children they have produced, surveys of men do not provide an ideal tool for investigating how socio-economic or other characteristics affect their levels of fertility. It is clearly impossible for reasons of social acceptability as well as expense to attach genetic testing to large fertility surveys. Yet, vexing as these problems are, demographers are confident that they can learn to interpret systematic discrepancies between men's and women's reports and use these interpretations to adjust their data for accurate estimates of the true numbers of births.

The Male Life Course

Men's motives for engendering children evolve throughout their lives. Each engendering takes place at a particular phase of a man's physical development, sexuality, family and sexual relationships, economic career, understanding and expectations of life, and so on. In each new phase, various motives enter in or drop out while others remain but grow stronger or weaker.

The concept of the male life course is useful for identifying general patterns in the lifelong evolution of men's attitudes toward reproduction. There are numerous ways of marking off the life course so that a man's passage from one stage to the next is likely to be accompanied by important changes in the meaning and consequences of procreation.

An obvious breakdown of the life course in monogamous societies is: puberty, adolescence, bachelorhood, early marriage, child-rearing and 'empty nest' (when all children have left the parental home). In the first three stages, procreation is likely to provoke social opprobrium as well as divert energy from obtaining adequate education and experience for a good career. In contrast, an analysis of data from the Demographic and Health Surveys conducted in 9 sub-Saharan countries showed that a typical polygynous man's life course might consist of: bachelorhood; a first marriage at around 22 years of age; addition of a second wife around 10 years later; an affair with a mistress lasting from about age 38 to 42; divorce from the first wife at age 45; an affair with another mistress lasting throughout the man's 50s; being left by wife number 2 simultaneously with the ending of that affair; and marriage to a third and final wife at around age 62. Clearly, such a man's readiness to procreate is likely to change with the initiation or termination of each marriage and affair. Prominent reasons include the dynamics of each new relationship, the impact of a pregnancy on previous and continuing relationships and the economic ramifications of having to support more or fewer wives.

Demographers also commonly demarcate the life course so that each additional child starts a new phase. Doing so emphasises the effect that the number of existing children has on a man's motives for having another. For example, a man may wish to produce a first child partly to establish his masculinity and maturity, but may be free of such concerns when he makes subsequent reproductive deliberations. (Masculinity may recur as a motive decades later, however, in the form of a wish to demonstrate that his manliness is still intact despite advanced age.) In some Asian societies, having two sons may allay a man's anxiety - and his kin's - about having a male heir to provide for himself and his family when age makes him infirm, and to light his funeral pyre when he dies. The man may now contemplate having another child more emphatically for other reasons. In general, men's expectations of their first and later children often differ. Men of the Tswana people of Botswana are concerned with accumulating enough children - and of the right ages - to accomplish all the critical household, farming and marketing tasks. Older children administer much of the care and education of their younger siblings. Daughters' marriage prospects, and sons' as well, depend on the amount of dowry their siblings provide. Currently in Western societies taken as a whole, the average man's incentives for having children outweigh his reasons for not having children when he has one child, but not when he has two.

In large groups, there may be one dominant male life course and/or several variants that together fit most men. In the United States and many countries in Western Europe, for example, divorce and remarriage are components of an increasingly common set of alternatives to the typical monogamous life course. This historical change has affected men's desire for children in various ways. First, men who remarry with younger spouses can have additional children at ages when many of their coevals no longer can because their wives have passed menopause. In addition, it has been suggested that the rising rates of marital dissolution may be making men in first marriages wary of investing wealth and emotion in children. Such investments are by nature risky, and probably more so when men are aware that mothers usually receive custody in case of divorce.

Men's Control over their Fertility

Men can fall short of their reproductive goals or unwillingly exceed them for many reasons. Three that may lend themselves to focused interventions within the scope of family planning and reproductive health programmes are non-scientific understandings of reproduction; low participation in family planning programmes, and knowledge of sexually transmitted diseases.

Non-scientific Concepts Concerning Reproduction

Physicians with practices in Nigeria noted in a focus group that they had all gathered considerable lore about sex from peers well before they reached puberty. Other observers have remarked that men often seem to receive relatively little routine education about sexuality and reproduction from their parents and elders. Some observers suggest that this is in part because the onset of sexual maturity tends to be less marked in young men than young women. A young woman's first menstruation provides an obvious occasion for giving her information, but a young man's first penile erections are likely to be unnoticed by anyone except himself. In the absence of any natural prompt for teaching, elders may not get around to it until well after the young man has started coital activities, if ever. Elders may feel less urgency to provide young men with information about reproduction because healthwise and socially, men suffer less drastic consequences than their partners do when an out-of-bounds pregnancy occurs.

Hypotheses about reproductive processes that young men cobble together based on serendipitous observations and imaginative induction are likely to be too inaccurate and abstract to be of much help in controlling their fertility. Moreover, traditional instruction about reproduction in many societies instils non-scientific concepts that can lead to a discrepancy between men's as well as women's fertility-related behaviours and their objectives. For example, a common belief in many societies, recently documented among the Coastal Boiken of New Guinea and shanty dwellers in Porto Alegre, Brazil, is that women are most likely to conceive during or near their periods of menstrual bleeding. A man's spermatic fluid and a woman's menstrual blood are interpreted to be the respective essences of the male and female procreative principles. The inference is then straightforward that merging the two fluids should be the most powerful way to make children. However, men and women who attempt to regulate their fertility in line with this belief will seek to achieve and avoid conception at the precise intervals in the menstrual cycle that are most discordant with their goals.

An obvious intervention, if it is considered desirable to give every individual maximum control over his or her fertility, is to teach the scientific view of reproduction. Instruction should be made available to boys and girls before the onset of sexual maturity so that they can avoid unwanted conceptions even in their first coital encounters. Scientific understanding that is implanted early is also more likely to take root before competing concepts complicate interpretation.

Programmes to provide scientifically-based information about reproduction should be attuned to pre-existing indigenous beliefs. Social scientists have often pointed out that people tend to construe new information so that it fits with what they already suppose. An example of this principle was recently documented in Porto Alegre, Brazil. Women who received oral contraceptives from a new programme felt that the dosing schedules, which include pill-free intermissions around menstrual periods, confirmed their previous convictions that menstruation was a sign of maximum fecundability. Ultimately, this does not bode well for the women's reproductive satisfaction or the programme's success.

The importance of taking indigenous concepts into account when planning educational interventions deserves emphasis. In any society, concepts concerning sexuality and reproduction intertwine deeply with many other fundamental tenets and customs. To replace indigenous concepts with scientific ones can have potentially far-reaching effects on the way the society operates. It would be irresponsible to undertake such a replacement without considering what those changes might be.

As an illustration of this point, recent ethnological study of Coastal Boiken concepts of reproduction provided sufficient detail to permit speculation on ways in which they might cohere with each other and inform some Boiken

customs. In the next two paragraphs, the Boiken beliefs and customs mentioned are real but the interpretations are hypothetical. The purpose is to suggest the ambiguous but profound interrelatedness of ideas about reproduction, value systems and social structures that must pertain in any society.

Traditional Boiken belief holds that for each sex, exposure to the other sex's essence, as substantiated in sexual fluids, is corrosive to good health. The debilitation is cumulative, but can be retarded by purging, which menstruation accomplishes for women, but which men must self-induce by drawing blood from the penis. As a result, men limit coital contacts with women. Most of all they are chary of contacts with menstruating women, since the female fluids are most concentrated and copious during menstruation.

We can imagine that the Boiken have a notion about the strength of their fertility based on their experience trying to conceive and the number of their births. This notion might well be affected by the extent to which, in accordance with their traditional beliefs, they concentrate their child-seeking sexual activity at a time in the woman's cycle when conception is relatively unlikely. The Boiken might possibly develop an ironic sense of the way fertility operates, insofar as they are more likely to conceive on non-menstrual days when they are not trying than on menstrual days when they are trying. We can hypothesise that the Boiken sense a discordance between the timing of their attempts to conceive and that of their conceptions. Such a sense could logically reinforce their documented belief that a spiritual union between sexual partners, rather than sexual activity itself, causes a conception. One may suspect that the Boiken tradition's partial decoupling of sex from reproduction underlies, or at least abets, some of their rules for establishing paternity and distributing children. For example, Boiken custom allows a young man to disclaim responsibility for a pregnancy if he has not had several occasions of intercourse with the woman. Unmarried Boiken women incur little censure by becoming pregnant, and children without fathers are adopted readily and without stigma.

Participation in Family Planning Programmes

Men's attitudes toward family planning programmes are not uniform everywhere, and can be highly mixed even in a single setting. This is demonstrated by findings from a recent field study conducted among poor men in upper Egypt. A minor portion of respondents deplored the government-sponsored, internationally administered family planning programme as an attack on men's traditional authority and a plot to depopulate Islam. In general, however, men in this patriarchal area reluctantly accepted the need to lower fertility. Their ideas about masculinity and morality committed them to providing for their families' necessities, and economic deterioration was reducing the number of people they could hope to sustain. Most men conferred with their wives on contraceptive decisions. Their concerns in these discussions were to find a method that neither endangered their own or their wives' health nor precluded either partner's sexual pleasure. By and large, they felt that condoms failed both of these criteria. With regard to health, they feared that spermatic fluid trapped by the condom might reenter the urethra and cause disease.

Most family planning programmes currently make relatively little effort to communicate directly with men or understand their concerns. As already discussed, scant knowledge is available to identify incentives for men to take part. Technology has been slow to produce contraceptive methods for men to use who do not like condoms or wish to undergo sterilisation.

Family planning programmes' neglect of men has probably exacerbated some unfortunate situations. Many men abandon responsibility for contraception to their partners. Some women feel unfairly burdened with responsibility for assuring effective contraception. On the other hand, plentiful anecdotes bespeak a common suspicion among men that their partners are controlling their fertility secretly. Short of expanded male participation in family planning, enhanced male co-operation with women's participation would improve success. Men's objections to family planning prompt some women to select contraceptive methods from the limited set of those that their partners cannot easily detect. For some women, these more inconspicuous methods are less effective and safe than others would be.

Prevention and Treatment of Sexually Transmitted Diseases

Lack of information about avoiding sexual disease transmission, and limited access to diagnosis and treatment of these diseases, are important obstacles to men's control over their fertility. Men generally have wider sexual networks than women and are consequently at higher risk for exposure to sexually transmitted organisms. Many of those who develop infection experience painful symptoms that can deter coital activity. Infection also brings risks for complications that lead to infertility.

Men's education should cover information on choosing sexual partners and planning activities to limit disease risks, use of condoms for protection, and identification of signs and symptoms. Treating sexually transmitted disease episodes in men is a relatively convenient way to attack the spread of organisms since men generally

develop more marked signs and symptoms of acute infection than women do. Moreover, because the man is likely to be the first member of a long-term couple to acquire an organism, avoidance or rapid recognition and eradication of his infection can interrupt the chain of transmission before it reaches his partner. This is especially desirable because women's anatomy and physiology make them more susceptible to infection-related infertility.

Men as Collaborators in Fertility Decision-Making

A couple's decision to try to conceive or avoid conception may involve consensus, compromise, coercion or co-option of decision-making by either partner. The World Population Conference Action Program goal of helping every individual achieve satisfaction with his or her reproductive performance will be facilitated by increasing the occasions and dimensions of consensus. Researchers today are focusing increasing attention on household decision-making, a topic that may eventually inform programmes to promote the potential for partners to agree in decisions to conceive or avoid conceiving a child. These studies are in very early stages, however, and so far only qualitative and tentative statements can be made about the extent to which couples concur and the conditions in which they do so.

Men and women in couples often have fertility incentives and disincentives that are complementary overall. Presumably, the agreement is generally most comprehensive between young married or marriage-bound couples who are setting out to have a first child. It is in these situations that the desire to experience fertility and begin a family are most likely to be very strong motives for both partners.

In decision-making over second and higher-order children, the urge to experience and the need to establish fertility are likely to be less pressing. The couple's desires may diverge as a result of factors such as the woman's experience of the energy costs of pregnancy and child-bearing, differing degrees of satisfaction with the partners' respective roles in child rearing, and clearer knowledge of the opportunity costs of raising children. In addition, as the number of a couple's existing children increases, the personal, economic and social rationales for having an additional one may become less pressing.

The dovetailing of men's and women's motives for procreation can be very intricate. Men in the previously mentioned favela in Porto Alegre, Brazil, reported placing great value on impregnating women as a way to express their manhood. Women said that becoming pregnant was a means of drawing sexual partners into stronger, more committed relationships. Thus, both partners would seek a pregnancy. Once one was achieved, however, the same motives often did not produce harmony on the question of what should happen next. The man would usually want the woman to exhibit the bodily changes of pregnancy and the child to be born. He might not be willing, however, to give the woman the sorts of pledges she desired, either for herself or the child. Indeed, men commonly urged pregnant partners to carry their children to term, then put them out for adoption. The woman, for her part, assessed the man's reaction to the situation and, if she was sufficiently dissatisfied, might terminate the pregnancy.

The objective of striving to help everyone realise his or her fertility desires becomes complicated when couples disagree. At the level of the society overall, a type of intervention that can advance both partners' interests without favouring one over the other is the relief of circumstantial inequities that produce discord. When the social and economic status of women become more equivalent to that of men, for instance, potential fathers and mothers will face more similar trade-offs between the rewards of having children and those that might be expected from other opportunities. Such a state of affairs will broaden the area of mutuality for many couples, perhaps making compromise possible. There is also a pressing need to investigate the ways that men and women divide decision-making authority within various types of marriage traditions.

In addition to their distinct array of gender-related motivations concerning procreation, many men inherit ideas about masculinity that hinder their ability to negotiate with women. In patriarchal traditions, for example, men perceive of themselves as naturally active while women are naturally passive. A near-universal trope of myth and legend gives expression to this notion. Men are also conditioned to feel that their sex gives them the overriding authority to make decisions that affect their wives and children.

Latin American 'macho' culture is a flamboyant patriarchal system distinguished by its endorsement of male exhibitionism, uncontrollable male sexual urges and sentimentality toward women. The Mexican programme Salud y Género is attempting to forestall the formation of such attitudes. It brings adolescent boys and girls together when they are beginning to evolve ideas about their adult roles, and involves them in common projects and discussions centering around gender identity. Of note, Salud y Género operates with the hypothesis that the 'macho' construction of masculinity not only has many negative effects on women and children, but is also largely responsible for high male morbidity and mortality from alcoholism, smoking, accidents, homicide and suicide. Programme personnel believe they are achieving significant results, although it is too soon for meaningful measurements of impact.

Fatherhood: Diverse, Crucial, Threatened

Fathers' roles vary tremendously from place to place. Social scientists have identified four basic forms: recognised biological paternity, hidden biological paternity, social paternity (attained by adopting) or social replacement (through raising a child to take one's place, as was the sometime custom among Chinese emperors and also occurs in less rarefied apprenticeship settings). Western societies strongly emphasise biological paternity. In the United States, if there is a dispute about the paternity of a child, the courts settle it through gene matching. In another culture, a man's biological relationship to a child may not be considered terribly significant. As mentioned previously, for example, the Coastal Boiken people will accept a young man's disclaimer of paternal responsibility on the grounds of a too-brief relation to the mother.

Along with different criteria for assigning paternity, societies hold diverse expectations of the ways fathers should relate to their children and what to provide for them. Western societies generally assume that, typically, a man will house his children and reside with them until they reach adulthood and leave for jobs, school or marriage. Fathers and children reside together, then, for roughly 20 years. In contrast, in one study, only about 50% of children and adolescents of the matrilineal Ashanti in Ghana were found to be residing with their fathers. Modern Western societies hold a man legally responsible for supporting his children economically until they reach adulthood. In contrast, among the Ga of Central Accra, Ghana, men are obligated to their children's mothers until the children are born, but they are never obligated to the children themselves.

The case of Mowetsi, a man of the Tswana group in Botswana, illustrates how extremely flexible the components of fatherhood can sometimes be under pressure of circumstances. Mowetsi has 7 children, engendered between 1954 and 1975. Throughout these decades he lived most of every year in South African mining camps which prohibited families, while his wife lived with their children in her parents' village. As a result of this economically necessary separation, Mowetsi's fatherly activities during this time consisted primarily of sending money to his in-laws that was used to raise his own, his in-laws' and his wife's siblings' children. He travelled home for important occasions in his children's lives, but obviously could not tend and guide them day to day. These functions were discharged by Mowetsi's father-in-law, with the result that Mowetsi's eldest children called this man by the word 'father'. In 1977, Mowetsi inherited his parents' home, retired from the mines, returned to Botswana, and assumed the headship of his household. Altogether, Mowetsi had almost no contact with his eldest children from their births to their achieving independence. Yet he has resided with and raised his youngest child constantly since around the time of its first steps. He is also raising grandchildren whose parents are away, as his father-in-law did for him. Mowetsi's paternal career is not unusual among the Tswana, where females head 40% of all households.

While fatherhood's entailments diverge greatly between societies, the necessity for a child to have a father is critical in many, perhaps most places. In many cultures, fathers alone can confer a viable social identity that assures a child the standard social entitlements. In some religious societies, for example, fathers alone can sponsor children for ritual observances that culminate in the bestowal of full community membership. In patriarchal societies, only fathers may be able to provide children with first-rate kinship connections as well as inheritances. Fatherlessness, in contrast, frequently imparts stigma and diminished chances of thriving. In Western countries, males who grow up without fathers are more likely to become wards of the criminal justice system. Fatherlessness can be directly lethal. In pre-Colonial Ghana and Botswana, custom prohibited men from asserting paternity of children who were born to certain non-marriageable women, and these children might be killed at birth. In the United States, newspapers frequently tell the story of a man who is so intolerant of his partner's child by a previous relationship that he kills it - or of a woman who kills her own child to remove a source of tension in a new relationship.

Having a father is generally important for a child's welfare even when fatherless-ness carries relatively little social stigma. Men generally have marked advantages over women in the ability to accumulate wealth, so children whose fathers contribute economically to their upbringing have the advantages that the differential will pay for. In the United States, for example, wages have failed to keep pace with rising prices for several decades, to the extent that both parents must work to make ends meet and supply their children's needs. If the father withdraws and the mother must support their children on what she alone can earn, the chances that the child will live in poverty are greatly increased.

Some observers fear that contemporary socio-economic developments are weakening men's attachment to their paternal roles and their abilities to fulfil them. As evidence of a retreat from fatherhood, they point to the increasing global incidence of children born out of wedlock. In addition, in some West African societies that encompass polygamy, men are reportedly forming more 'outside' relationships in order to maintain multiple sexual partners without undertaking the financial commitments that marrying would involve. Those rejected commitments often involve responsibility for children's upkeep and education.

The most universally significant of current developments militating against fatherhood, perhaps, is the escalating cost of raising children. Worldwide, parents need to invest ever-growing amounts during a child's early years and

wait longer for returns. Among other reasons, this is related to children's increasing need for prolonged schooling in order to succeed in the workplace and marry. Not only is sons' education more crucial than ever, but daughters also require education. Recent data from France are indicative. During the last decade, for the first time, women with less education were less likely to be married. The researchers concluded that now, as never before, women require a minimum level of education in order to be considered worthy of marriage.

The drying up of economic opportunities in many areas, particularly rural ones, is also straining men's ability and willingness to fulfil their paternal roles. More and more men are forced to migrate to find employment. Prolonged absences from their families and wider social networks at home can erode the emotional and other forces that attach men to their children.

Also affecting fatherhood are the current high rates of marital dissolution and births outside of established relationships. Both of these factors may be exacerbated by the just-mentioned trends in costs of child rearing and migration. With regard to divorce, fathers' and mothers' intolerance for each other is an obvious contributor to fathers withdrawing from their children. Men can also be reluctant to support children whom they seldom see following a divorce, and concerning whose upbringing they have little say. That this, rather than indifference, underlies a portion of abandonment is apparent in the fact that in the United States, a number of fathers have recently challenged the routine assignment of child custody to wives in divorce cases.

Scientific knowledge about fatherhood is in too nascent a state to permit global recommendations for strengthening the institution. Policy makers will have to be provided with information about the specific customs and condition of fatherhood that pertain in their own areas. Nevertheless, it is possible to advance some tentative general strategies for approaching the issue in many settings. The first proceeds from the observation that some male motives for reproducing imply a willingness to carry out their paternal roles while others do not. A man who engenders a child in order to enjoy the child's devotion and freshness of vision obviously must live with it to do so to the fullest. One whose goal in procreation is to seal or deepen his relationship with the child's mother cannot usually renounce the child without jeopardising that relationship. One who wishes to eventually obtain economic, political or social returns from a child is more likely to succeed if he cultivates its loyalty and capacities - for example, by providing appropriate initiations or a good education - during the growing years. In contrast, men whose main objectives are establishing their masculinity and power over women do not necessarily advance these interests through child rearing. A programmatic response to this situation would involve gender education, as discussed before, to bolster the motives that entail commitment and downplay the others. Helping men achieve more control over their fertility through contraception can lower the proportion of children whose arrival precipitates consideration of fatherhood, rather than results from a previous desire for fatherhood.

Politicians can strive to lessen the need for migration by increasing the amount of work that is locally available to their constituents. Subsidies for schools can reduce parents' costs of raising their children to become viable members of society. The establishment of equal status and wages for women will give families more options for arranging their income-producing and child-rearing activities. When women bring home wages equal to those of men, households will find that it is economically sound for men to spend more time at home with their children, presumably reaping more emotional rewards from fatherhood. Finally, laws and customs that privilege motherhood over fatherhood, on the assumption that the former is a naturally more essential to the child than the latter, surely need to be re-examined.

Seminar on Male Fertility in the Era of Fertility Decline

List of the papers presented at the seminar on 'Male Fertility in the Era of Fertility Decline' organised by the IUSSP Scientific Committee on Anthropological Demography, in collaboration with El Colegio de Mexico, the Sociedad Mexicana de Demografia and the University of Zacatecas, and with the support of El Gobierno del Estado de Zacatecas, held in Zacatecas, Mexico from 13-16 November 1995.

Session 1: Overviews

- 'Anthropological Traditions of Studying Paternity' by Jane Guyer
- 'Male Fertility Trends in Industrial Countries: Theories in Search of Some Evidence' by David Coleman

Session 2: Changing Reproduction: The Recent European Experience

- 'Demographic Patterns of Motherhood and Fatherhood in France' by Laurent Toulemon and Evelyne Lapierre-Adamcyk
- 'Attitudes of East vs. West German Men on Having Children' by Katarina Pohl

Session 3: Reproduction and the Male Life Cycle

- 'Someone to Take My Place: Fertility and the Male Life Cycle among Coastal Boiken, East Sepik Province, Papua New Guinea' by Philip Setel
- 'Men and Women; Fatherhood and Motherhood in Spain; Church, State and Family' by Pau Miret-Gamundi
- 'The Perspectives and Dimensions of Sexuality Among Nigerian Males: Implications for Fertility and Reproductive Health Outcomes' by Nosa Orobato
- 'Male Fertility as a Life Time of Relationships: Contextualizing Men's Biological Reproduction in Botswana' by Nicholas Townsend

Session 4: Men in Multiple Unions

- 'Men, Polygyny, and Fertility over the Life Course in Sub-Saharan Africa' by Ann Blanc and Anastasia Gage
- 'Male Nuptiality and Male Fertility Among the Qing Nobility' by James Lee and Wang Feng

Session 5: Male Dilemmas Surrounding Fatherhood and Reproductive Health

- 'Some Reflections on the Social Interpretation of Male Participation in Reproductive Health Processes' by Juan Guillermo Figueroa Perea
- 'The Male Protagonists in the "Commoditization" of Aspects of Female Life Cycle in Ghana' by John Anarfi and Clara Korkor Fayorsey
- 'Men, Parenthood, and Divorce in the Era of the Second Demographic Transition' by Frances K. Goldscheider, Pamela Webster, and Gayle Kaufman
- 'Masculinity as a Risk Factor' by Benno de Keijzer
- 'Risky Business: Disinhibition and Other Adolescent Sexuality' by Benjamin Campbell

Session 6: The Culture of Masculinity and Reproduction

- 'La semilla del hombre. Notas etnológicas acerca de la sexualidad y fertilidad masculinas en tres culturas indoamericanas' by Mario Humberto Ruz
- 'Male Reproductive Culture and Sexuality in South Brazil: Combining Ethnographic Data and Statistical Analysis' by Ondina Leal Fachel and Jandyra M.G. Fachel
- 'What about Men? A Perspective on Fertility Control in Egypt' by Kamran Asdar Ali
- 'Reproductive Behaviour and Masculinity in Mexico' by Eduardo Liendro

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