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DEMOGRAPHIC CHANGE AND RESPONSE: SOCIAL CONTEXT AND THE PRACTICE OF BIRTH CONTROL IN SIX COUNTRIES

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This paper expands on Kingsley Davis's demographic thesis of change and response. Specifically, we consider the social context that accounts for the primacy of particular birth control methods that bring about fertility change during specific time periods. We examine the relevance of state policy (including national family planning programs), the international population establishment, the medical profession, organized religion, and women's groups using case studies from Japan, Russia, Puerto Rico, China, India, and Cameroon. Some of these countries are undergoing the second demographic transition, others the first. Despite variations in context, heavy reliance on sterilization and/or abortion as a means of birth control is a major response in most of these countries. The key roles of the medical profession and state policy are discussed, along with the general lack of influence of religion and of women's groups in these countries.

Keywords: birth control, fertility change, social context, medical profession, state policy, religion, women's groups

Kingsley Davis's 1963 presidential address to the Population Association of America offered a new perspective on demographic change: its 'multiphasic' nature. Stimulated by marked declines in mortality and resulting high levels of natural increase, countries that had undergone significant economic development responded in 'almost every demographic manner then known.... Within a brief period they quickly postponed marriage, embraced contraception, began sterilization, utilized abortions, and migrated outward' (Davis 1963: 349). Davis provided data for Japan and several Northern European countries to demonstrate the inappropriateness of focusing on single responses, such as the high rate of abortion in Japan or the late ages at marriage in Ireland. (It would have been more appropriate to call these responses multifaceted rather than multiphasic, since the particular sequencing of responses and explanations for such patterns were not discussed.) Davis's focus on multiple

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responses was a major contribution to demographic discourse. Moreover, he argued that it is not absolute poverty that explains how the stimulus produces the response, but rather rising prosperity and the 'fear of invidious deprivation' (Davis 1963: 362).

Virtually all of Davis's writings have recognized the importance of social structure to understand demographic behaviour. Yet in this particular writing he falls short in specifying how contextual factors play a major role in determining the specific responses experienced by different countries. For the case of Ireland, he does state that its response:

illustrates the principle that the explanation of as fundamental a feature of society as its demographic changes is not to be found in some flexible biological or economic law or in some particularistic cultural idiosyncrasy, but rather in the main features of the operating social organization on one hand and, on the other, in the changing conditions which arise from past performance and the altering international politico-economic environment (Davis 1963: 361).

This conclusion is the basis for further elaboration on the relevance of social context, both fairly stable institutional factors and more dynamic political and economic considerations.

It is the purpose of this paper to expand upon such contextual factors that operate at the macro level concurrently with fertility decline, including recent movement toward below-replacement levels. The contextual factors to be considered are state policy (including national family planning programs); the international population establishment; the medical profession; organized religion; and women's groups – each of which may operate in different ways in different countries. To what extent do these factors affect birth control choices of the general population, leading some methods to predominate and others not? This is the basic question we address. We note demographic changes in mortality, migration, and the postponement of marriage, but our focus is on birth control methods, that is, contraception and abortion, both of which generally need institutional support for safe and effective adoption on a wide scale.

We know from an abundant literature that it is not just the use of birth control but the particular methods used that have important consequences for individual and family welfare. Some methods are more effective than others; some are permanent and others temporary; some have more health risks than others; and some are more costly than others. From a programmatic as well as individual perspective, it is important to understand how these trade-offs are made (see, for example, Bulatao, Palmore, and Ward 1989).¹ Moreover, in the post-Cairo era (after the 1994 International Conference on Population and Development), quality of care and women's reproductive rights, issues that entail providing safe and effective method choices, have become more salient in population policy (Presser and Sen 2000).

'Choice' of birth control methods, however, is constrained by knowledge and availability which, in turn, are determined by social context. From a macro perspective, the issues of historical context and the concept of path dependency are also relevant. Drawing upon the experiences of Mexico and Brazil, Potter (1999:703) refers to 'the inertia that makes introduction of new contraceptive methods difficult'. This occurs either because 'government policies and styles of implementing them may outlive the conditions for which they were originally designed [Mexico] or because governments take a laissez-faire approach [that] can also yield perverse, unwanted consequences [Brazil]' (Potter 1999: 704). Studies that take a comparative perspective

of contextual factors that support specific birth control practices are minimal, and typically concentrate on one country (see Martine 1996).

In this paper we focus on six countries, both developing and highly industrialized, treating them each as case studies, although in less depth than can be addressed alone in individual papers. The countries are Japan, Russia, Puerto Rico, China, India, and Cameroon. These countries are not meant to be representative of all countries nor of particular periods under consideration. Indeed, they were selected because each of the authors has a special interest in at least one of them. The fact that the six countries are at various levels of economic development, are at different stages of demographic transition (some in the first transition and some in the second), and have different contextual histories, poses a challenging issue: are there similarities in the dominant role of some contextual factors that determine the primacy of certain birth control methods, alone or in combination, in these countries?

Japan, one of the industrialized countries that Davis discussed to demonstrate his thesis of multiphasic response, is particularly interesting to consider in the decades following World War II, as it was the first Asian country to undergo marked fertility decline, following an earlier period in which it had been strongly pronatalist as an imperialist nation. The focus on Russia is more contemporary. Having long ago experienced its first demographic transition, and now undergoing significant economic instability, it is regarded as undergoing a 'demographic crisis' with extremely low fertility levels (below replacement) and unusually high mortality for a developed country. Puerto Rico is distinctive as a commonwealth of the United States, but is essentially a developing country. Although after World War II there was unrestricted, heavy migration to the mainland US that served to alleviate population growth, Puerto Ricans on the island also experienced a slow but steady fertility decline; Puerto Rico was one of the first developing countries to do so, and its fertility is now near replacement level. China is a developing country that has undergone rapid industrialization and successful economic reforms since the 1970s, along with declines in mortality. The state, however, did not want to depend on such stimuli for a gradual fertility decline, and instead implemented a stringent antinatalist policy that has dramatically reduced fertility in recent decades, leaving China now below replacement level. India is unique as a developing country in having the first official family planning program in 1952, when fertility was high. It has since undergone a decline in fertility, but not as remarkable as that of China. The greatest fall in fertility was in the 1980s during a time of increased economic growth and marked declines in mortality; today, Indian fertility remains well above replacement level. Cameroon, the last of the countries considered, is only at the early stages of the demographic transition with high fertility. Further, it has a generalized HIV epidemic: a phenomenon we have only recently begun to take into account when assessing demographic change.² Cameroon is especially interesting for examining the social context of fertility change at a time of mortality reversal.

For these particular countries and periods of interest, at differing stages in the demographic transition, what methods of birth control became predominant and how were these 'choices' facilitated by the multifaceted social contexts in which they occurred? Are there similarities despite these differing demographic stages, and despite differing political regimes and economic conditions, that help us to understand how birth control methods gain primacy in a country?

We turn now to these six case studies to provide insights into these questions. We

seek to offer some generalizations from these countries that will inspire further comparative analysis and ultimately lead to more systematic theory construction.

Japan and its dramatic continuation of the postwar fertility decline

As noted above, Davis used Japan as one of the countries to demonstrate the multifaceted nature of fertility decline. Among the proximate variables on which he focused for the first two decades after World War II, abortion and the postponement of marriage were key factors. Since that period, Japan's total fertility rate has continued to decline. The country is now undergoing its second demographic transition, with one of the lowest total fertility rates in the world; in 2004, it was 1.3 births per woman, while the infant mortality rate reached a low of 2.8 per 1,000 live births. The mean age at first marriage increased for women from 23.0 in 1950 to 27.8 in 2004 (*Statistical Handbook of Japan* 2005).

Putting aside the important issue of delayed marriage, what was the role of particular birth control methods?

The primary birth control responses: condoms and abortion

As was true when Davis wrote in 1963, abortion remains a prominent birth control method in Japan. In 2000, approximately 26 per cent of married women had experienced at least one abortion. Condoms remain the main contraceptive method, with 75 per cent of married couples using this method. Sterilization is far less frequent, chosen by only six per cent of married women. Oral contraception ('the pill') is not popular (National Institute 2003).

Structural factors during the postwar period helped to sustain heavy reliance on condom use – with or without periodic abstinence (rhythm) – and abortion, often a sequenced mode of birth control (Coleman 1981).

The social context

State policy was a highly relevant contextual factor. Before World War II, the Japanese government was pronatalist, seeking to increase the population and thus create a stronger army. Accordingly, abortion was prohibited as well as most birth control methods, the exception being condoms, which the Japanese government distributed to soldiers overseas for hygienic purposes (Jitsukawa and Djerassi 1994; Kinjo 1995). However, after Japan's defeat in World War II, the country's situation drastically changed; the national economy was destroyed and many suffered from starvation. The return of the soldiers brought about a postwar baby boom, resulting in a strong fear that population growth was out of control and would render Japan incapable of economic recovery. Condom use among married couples was less than 10 per cent (Ross and Frejka 1998), the number of dangerous 'back-alley' abortions increased dramatically (Norgren 2001), and a climate ready for policy change emerged.

The Eugenic Protection Law was the essential policy change. When passed in 1948, it made abortion legal only for eugenic reasons, rape, or grave health hazard. But in 1949, economic reasons were added, and in 1952 the requirement of a screening committee was dropped and only the consent of the husband and physician (as well as the woman) was needed (Ogino 2004). Virtually all women seeking abortion throughout the postwar period cited economic reasons for their abortion (Norgren

2001). As a result, abortion has been accessible to Japanese women for decades, with its highest incidence rates occurring in the mid-1950s (National Institute 2003).³

Concern about the health effects of abortion in the early 1950s, attributed largely to poor techniques, unskilled practitioners, and late terminations, led the government to encourage contraception rather than abortion (Taeuber 1958). But traditional methods, including not only condoms but periodic abstinence and *coitus interruptus*, have high failure rates⁴, and the demand for abortion continues, although much lower now than it was in the 1950s: reportedly 29.2 abortions per 100 births in 2001, compared to 71.6 in 1957 (National Institute 2003). Moreover, abortion is now practised with minimal health effects.

Medical professionals benefited greatly from the scare of the postwar baby boom and the liberal interpretation of economic reasons in the abortion law. Performing abortions, primarily in the private sector and outside the Universal Health Insurance System, became a lucrative business for obstetrician–gynaecologists (Jitsukawa and Djerassi 1994; Norgren 2001). The Japanese Association for Maternal Welfare⁵ and similar associations served as powerful lobbyists working to maintain and expand abortion services to the fullest extent possible. They had been accused of pushing abortion instead of offering or recommending the less profitable contraceptive alternatives that were available (Coleman 1981), and of going as far as opposing the legalization of oral contraceptives for fear they would reduce the demand for abortions (Norgren 2001). Physicians argued that oral contraception would increase promiscuity and the spread of sexually transmitted infections and HIV, and that its safety demonstrated elsewhere could not be applied to Japanese women for whom there was a lack of research. However, as abortion demand declined and physicians were permitted to sell prescription drugs, the pill became less of a threat to their income (National Institute 2003). Indeed, in the 1980s and 1990s, the medical associations lobbied for the approval of oral contraceptives. The Ministry of Health and Welfare offered resistance, expressing concern about increasing sexually transmitted diseases and encouraging even lower fertility; in 1995 there was the additional international concern about thrombotic adverse effects of the low-dose pill. But in 1999, the low-dose pill was finally approved for contraceptive purposes (Goto, Reich and Aitken 1999). The failure to legalize oral contraceptives in Japan throughout the later part of the twentieth century probably contributed to the continued reliance of women on abortion, and the change in contraceptive law after the medical establishment switched stances points to the power and influence of this group.

It remains to be seen how the legality of oral contraception will affect the abortion rates (and condom use) in Japan, given its recent introduction. In 2000, only four per cent of married women in Japan used the pill as a contraceptive method, similar to the rates in the early 1990s. Abortion is likely to remain predominant, either as a primary method or to back up the condom and other traditional methods. It has become culturally institutionalized, with hardly any religious opposition. The acceptance of abortion is facilitated by the Buddhist ceremony called *mizuko kuyo*, which provides Japanese women with a way to put the souls of an aborted foetus to sleep, allowing for the Buddhist notion of rebirth (Oaks 1994).

Women's groups in general played a minor role in promoting access to abortion in Japan and in the legalization of oral contraceptives. Japanese women were, in a way, handed the ability to control their fertility by abortion, unlike women in other countries who have fought long and hard battles for the right to safe and legal abortions

(Ogino 2004). At the time of the passing of the Eugenic Protection Law, mainstream women's organizations were interested instead in working to protect the ideal of 'motherhood' and were following the 'good wife, wise mother' ideology (Norgren 2001). The Western feminist notion of women's rights as individuals did not enter Japanese discourse until the late 1960s, long after abortion was accessible and commonly practised by Japanese women.

However, women's groups became active supporters of abortion when unsuccessful efforts were made to revise the abortion law, and remove the right to abortion on request, both in 1972 and 1982.⁶ The legalization of oral contraception did not receive as much attention from women's organizations, except for some small radical feminist groups. Mainstream women's groups reflected the negative assessment of oral contraception held by most Japanese women in the later half of the twentieth century: that it constituted a violating, artificial regulation of the natural hormone cycle, made women seem promiscuous, and had strong negative medical side-effects. This was further amplified by the thalidomide tragedy and the resulting suspicions of pharmaceutical companies in general (Jitsukawa and Djerassi 1994). A 1998 Family Planning Survey revealed that only 10 per cent of women planned to use the pill if it was legalized, and given such lack of interest, mainstream women's groups did not take this on as an issue (Kihara *et al.* 2001).

Russia and plummeting fertility during economic restructuring

Russia, like Japan, is undergoing its second demographic transition. But unlike Japan, its extremely low fertility is concomitant with high levels of mortality from preventable causes and minimal net migration.⁷ Russia's total fertility rate plummeted from 2.2 children per woman in 1987 to 1.3 in 2003, one of the lowest rates in the world (Avdeev 2001; Heleniak 2002; United Nations 2006a). As noted earlier, it is considered by many to be in a state of 'demographic crisis' (DaVanzo and Grammich 2001). Of special concern is that males of working age are experiencing rising death rates, highly uncommon in the industrialized world (Vishnevskii 1999). Infant mortality, three to four times higher than in most other developed nations, has declined slightly over the past decade, from 17.4 infant deaths per 1,000 live births in 1990 to 12.0 in 2004 (Vishnevskii 1999; United Nations 2004). In 1996, the average age at first marriage was 22.2 for women, as it was for most of the twentieth century (Avdeev and Monnier 2000: Table 1).

The primary birth control response: abortion and the IUD

As in Japan, the primary method that brought about and maintained Russia's second demographic transition during the 1990s has been abortion (Popov 1996: 18). Indeed, Russia has one of the highest abortion rates in the world (RAND 2002), though the rate has declined in recent years: in 1990, the rate stood at 113.9 abortions per 1,000 women aged 15–49, whereas in 2004 it was 45.1 (TransMONEE 2006: Natality Table 2.19). Although most estimates of the abortion rate are high, the estimates are wide-ranging and questionable given that many abortions may go unrecorded (Popov 1995; Popov and David 1999). Unlike in Japan, however, condom use is low (Popov and David 1999; DaVanzo and Grammich 2001), although there is growing use of modern birth control methods.

The intra-uterine device (IUD) is the predominant contraceptive method: in 1996, 18 per cent of women aged 15–49 were users. However, its popularity is slowly declining and reliance on oral contraception, while still very low at six per cent, is rising (Avdeev and Troitskaia 1999: Table 6). Sterilization, a contraceptive choice practised widely in Western nations, remains rare in Russia, as it was outlawed for decades and only relegalized in 1990 (Hollander 1997; RAND 2002: 2; Schehl 2002). In 1992, fewer than one per cent of women of reproductive age were sterilized (Popov 1996), and there is no suggestion in the literature of a marked increase thereafter.

The social context

The social context that led to such high abortion rates and ultimately below-replacement fertility is multifaceted, but the major influences are the state and the medical establishment. There is slight (but growing) religious opposition to abortion from the Russian Orthodox Church, and little activity on the part of the women's groups, which suffer from a lack of funding and focus primarily on issues of economic security.

The more general context is one of extreme economic downturn and political instability (Hollander 1997; Vishnevskii 1999: 9). The fall of communism in 1989 and subsequent massive restructuring of the economy toward a market system have left the country plagued by high levels of unemployment, low Gross Domestic Product, low productivity levels, inflation, poor exchange rates, and general social upheaval. The overall grave economic situation and uncertainty about the future facing Russians in recent years has led couples to reconsider and reduce their fertility goals, with most couples opting for one- or two-child families and eschewing large families altogether (Avdeev 2001). Russia's fertility decline in the 1990s is consistent with the longstanding trend toward below-replacement fertility experienced by other Western nations with comparable levels of education, degrees of urbanization, rights afforded to women, and childrearing norms. However, the economic and political instability have no doubt aggravated the declines in fertility that were already taking place in Russia (Sargeant 1996; Vishnevskii 1999; DaVanzo and Grammich 2001).

In 1920, the Russian government was the first in the world to legalize abortion, advocating it as a right essential to the liberation of its women (Davin 1992; Popov and David 1999). Although abortion was prohibited under Stalin's rule between 1936 and 1955, Russia still has some of the broadest legal provisions for induced abortion today (Popov 1996; Popov and David 1999). Thus, as in Japan, abortion was legal before many effective forms of modern contraception were widely available. This led to what scholars call an 'abortion culture,' whereby women relied primarily on abortion to regulate their family size not because women preferred it but because they had no other effective choices (Henry David, personal communication, 8 March 2005). For most of the twentieth century, abortion was viewed as a routine medical procedure in Russia with few moral objections (Popov and David 1999). Soviet ideology reinforced the reliance on abortion rather than a broad array of birth control options, maintaining that population growth, not fertility decline, was an outgrowth of socialist economic improvement. It was believed that once the state provided services to alleviate the burdens associated with child rearing, unwanted pregnancies would no longer be viewed as a problem and women would no longer seek abortions or be concerned with regulating their fertility (Popov and David 1999). In the late 1980s, the state even adopted a pronatalist policy offering various financial incentives

for couples to have children: paid maternity leave, birth premiums and zero-interest loans. However, these incentives resulted in women timing their births earlier rather than increasing their overall fertility (Zakharov and Ivanova 1996).

The state lacked enthusiasm for modern contraception both because of the low birth rate and because of popular fears, as in Japan, of adverse health side effects resulting from the pill. These fears were reinforced by the well-established availability of abortion and the negative views of physicians toward modern contraception in general (Popov, Visser and Ketting 1993; Popov and David 1999). The right to family planning, despite being recognized as a legal right for decades, has historically been restricted owing to the lack of information, availability, and trained medical care personnel to assist in distribution and instruction (Popov and David 1999; DaVanzo and Grammich 2001). It was only in the early 1990s, when induced abortion was identified as a social priority and a health care problem, that a significant amount of social attention was paid to the issue of family planning in Russia.

Russian contraceptive access increased marginally over the 1990s through the combined efforts of the Russian government and the United States Agency for International Development (USAID), both of which sought to reduce abortion and maternal mortality (Davanzo and Grammich 2001). The Russian Family Planning Association, established in 1991 with the support of the International Planned Parenthood Federation, helped increase access to contraception by tripling the number of family planning clinics between 1991 and 1997 (Popov and David 1999; RAND 2002: 2). The Federal Family Planning Program, a 1994 initiative funded by the Russian government, also helped improve women's reproductive health by promoting and distributing contraceptives to women of fertile age. However, by 1998 the state was no longer funding the program, reflecting the government's weak commitment to family planning. In 1998, about 49 per cent of women aged 15 to 49 used modern methods of contraception (IPPF 2002) and about 14.5 per cent of all women reported an unmet need for contraception (Ross and Winfrey 2002: 139).

Another major reason that the abortion rate remains so high is that medical professionals have long had incentives to keep it that way. Until the late 1980s, a three-day hospital stay was required to obtain a legal abortion, which benefited Soviet hospitals that were financed by their number of occupied beds. Even after the collapse of the Soviet Union, though, the procedure is more profitable than encouraging contraception, especially for low-paid physicians in post-Soviet Russia (DaVanzo and Grammich 2001: 30; IPPF 2002; RAND 2002: 2; Schehl 2002). The average charge was 50 roubles for an early abortion and 100 roubles for a later one, which represented 25 to 50 per cent of a woman's average monthly income (Popov and David 1999).

It is unclear how much influence the medical establishment will retain over family planning, as selling contraceptives is a lucrative business, particularly for Western pharmaceutical companies in Russia's new market economy. Moreover, legal abortion has come under fire over the last decade from the Russian Orthodox Church and Western anti-abortion organizations (Williams 1996; RAND 2002).⁸ Before the 1990s, the church had little power, as did all organizations outside the state government. Over the past decade, the church has aligned itself with other international anti-abortion organizations to wage mass media campaigns pressing women to abstain from abortion (Dmitrieva 1996). However, the Russian Orthodox Church has only gained influence on the abortion issue in recent years (Williams 1996) and abortion remains the most popular method of fertility regulation.

Puerto Rico and the steady postwar fertility decline

Puerto Rico, a commonwealth of the United States, was one of the first of the developing countries to experience a marked and steady decline in fertility, and is currently completing its first demographic transition. Between 1950 and 1977, the total fertility rate fell by 48 per cent: from 5.2 to 2.7 children per woman; by 2003 it was 1.8 (Presser 1980; United Nations 2006a). The stimulus for a fertility decline was evident shortly after World War II. Infant mortality was dropping rapidly: from 67.6 per 1,000 births in 1949 to 23.0 in 1977; by 2003 it was 9.8 (United Nations 1950, 1978, 2004). In the post-World War II period, the standard of living was rising, and the Puerto Rican economy was offering increasing employment opportunities for women in the formal sector (Presser 1973). Rapid population growth that might have resulted from the sharp decline in infant mortality was suppressed by heavy net out-migration to the mainland US.⁹ In recent decades, the extent of out-migration and return-migration has fluctuated, depending on the economic conditions on the mainland. In 2000, the island population was 3.5 million with a net out-migration of only 130,185 in the preceding five years (US Census Bureau 2003). Marriage (consensual and legal) was being postponed as fertility began to decline (Presser 1980): the singulate mean age at marriage for women in 1990 was 23.5 (United Nations 2000).

The primary birth control response: female sterilization

Although a combination of demographic factors brought about this fertility decline, the primary means was voluntary female sterilization. Indeed, Puerto Rico was the first country in the world to experience widespread practice of this contraceptive method.

In 1947–48, close to seven per cent of all ever-married women, either in consensual or legal unions, were sterilized (Hatt 1952); by 1965, the prevalence of sterilization rose to 34 per cent of all mothers aged 20 to 49 (Presser 1973). Although sterilization was widespread before oral contraception was on the market, the availability of the pill did not alter the popularity of *la operacion*. Indeed, by 1995–96 (the most recent figures available), 45 per cent of all currently married women aged 15 to 49 were sterilized and only 10 per cent were on the pill (Departamento de Salud 1997). Fewer than four per cent of husbands had vasectomies. Moreover, the trend in female sterilization was toward earlier timing, that is, when younger and with fewer children, increasing its demographic impact.

Abortion was legalized in Puerto Rico in 1973 with the *Roe v. Wade* decision for the US. The extent of its practice before 1973 is difficult to estimate and the figures available are undoubtedly underestimates.¹⁰ Figures derived from survey data show that at least one-fourth of all Puerto Rican mothers aged 20 to 49 in 1965 had experienced one or more abortions at some prior time (Presser 1973). After legalization, the abortion rate was undoubtedly higher, although initially local laws forbidding abortion except on medical grounds were being enforced, unlike those forbidding sterilization (Presser 1980). The situation has since changed, and in 1991, the abortion rate per 1,000 women aged 15 to 44 was estimated to be 22, compared to 28 for all mainland US women (Azize-Vargas and Aviles 1997).

The social context

Physicians had introduced sterilization to Puerto Rican women as early as the 1930s in the private Presbyterian Hospital in San Juan. Fertility control was the objective,

even though sterilization was legal in Puerto Rico only for strictly therapeutic reasons. Many physicians reportedly felt that low-educated Puerto Ricans were generally ineffectual users of the contraceptive methods available at the time; moreover, they often saw the negative consequences of large families for the health and welfare of their patients and their families. But physician motivations in the decades ahead became financial as well as ideological; in the 1960s, women generally could not obtain sterilization in public hospitals unless their age and parity, multiplied, equalled or exceeded 120 (this '120 rule' was imposed by mainland regulations for sterilization). Consequently, since sterilizations were done immediately after the birth of a child, when it was easier to tie the Fallopian tubes, current techniques for 'interval' sterilization having not yet been developed, women who began childbearing early and wanted to stop after their second or third child had to go to private physicians and pay both for the birth of the child and for the sterilization: a cost that was often equivalent to a year's per capita income in Puerto Rico (Presser 1973). Many thousands of women were motivated to pay the cost, and physicians were clearly rewarded financially for their services.

Sterilization was not just illegal for contraceptive purposes; it was, and remains, against Catholic teaching, and about 90 per cent of Puerto Ricans are Catholic. But as Catholics, Puerto Rican women could sin only once with sterilization and be sure, even after confession, that they would not have any more children. At first, the Catholic Church was rumoured to have had a 'gentlemen's agreement' with the government, that 'if the clinics were not aggressive about their program or about case finding, the Church would not be aggressive either' (Stycos 1968). But religious opposition soon became active and the Church used the pulpit and the mass media to oppose sterilization. They hung black flags (to signify death) near private hospitals that provided sterilization, thereby identifying the locations. Church opposition actually served to popularize the method and encourage its practice (Presser 1973).

The government was eager to control population growth, and thus adopted a *laissez-faire* attitude toward the rising practice of sterilization rather than oppose it. It initially did little to promote birth control clinics on the island.¹¹ In the mid-1960s, however, the government started to provide support for such clinics in their health care centres, but referred to them as 'maternal health' or 'maternal education.' The Catholic Church agreed to allow such clinics to operate without arousing public opposition, providing that all methods, including periodic abstinence, were explained. These clinics did not offer sterilization. Its practice in government hospitals was left to the discretion of the directors of each hospital. Puerto Rico did not have an official sterilization program until 1974, but it was severely cut back in 1975 in response to opposition by leftist groups and the Catholic Church.

The principal private source of subsidized sterilizations in the 1950s and 1960s was the Family Planning Association of Puerto Rico (FPAPR), established in 1954 mostly with funding from philanthropic elites on the mainland (Ramirez de Arelano and Seipp 1983). It is estimated that the FPAPR was able to subsidize only about seven per cent of all sterilizations (Presser 1973).¹² Another contraceptive method promoted by FPAPR at this time was foam (Emko), donated by the Sunnan Foundation. This method had a high failure rate, and thus was not very effective either for birth spacing or termination. Presser (1980) has speculated that if sterilization had not been available, Puerto Rican women might have resorted to illegal abortion in much larger numbers; as women in other Latin American countries have done.¹³

Sterilization became widespread in Puerto Rico long before the second wave of feminism, and when feminist groups did emerge, they were linked with leftist organizations that used the high prevalence of sterilization to sensationalize the need for Puerto Rican independence. The sterilization of a high proportion of Puerto Rican women was not viewed as truly voluntary but as a consequence of colonial status. Similarly, leftist organizations did not initially support the legalization of abortion after *Roe v. Wade*, nor did emerging feminist groups. And the promotion of the pill or other contraceptive methods was seen as part of the population control establishment, and thus to be avoided.

These groups had little effect on practice. As previously noted, sterilization has become even more popular in Puerto Rico since the mid-1960s and the pill is not widely used. This persistence may be attributed largely to the fact that female sterilization in Puerto Rico, like abortion in Japan and Russia, was long institutionalized as a birth control method and women generally have been satisfied with it. But sterilization cannot be used for spacing, and thus before sterilization, or in lieu of it, many Puerto Rican women continue to rely on abortion.

China's rapid fertility decline in pre-reform and post-reform periods

China completed its first demographic transition in a dramatic fashion for a developing country in the 1970s and 1980s and is now embarking on the second. The total fertility rate dropped from 5.7 children per woman in 1970 to 2.8 in 1979, fluctuated around the replacement level in the 1980s, remained below the replacement level from 1992 (Lee and Feng 1999), and reached 1.6 in 2004 (PRB 2005). There was essentially no net emigration during this period. Infant mortality declined from 70.4 per 1000 births in 1970 to 39.4 in 1979, swung back to 50.1 in 1984 (Banister 1987), and stood at 27 in 2004 (PRB 2005). The mean age at first marriage for females rose from 20.2 in 1970 to 22.1 in 1982, and to 23.6 in 1998 (Scharping 2003).¹⁴ The fertility decline coincided with rapid industrialization in the 1970s, successful economic reforms and steady growth of GNP, and rising levels of urbanization since the 1980s.

The primary birth control responses: IUD, sterilization, and abortion

Although these developments provided a favourable setting for fertility decline, it was the state's family planning intervention that was of critical importance to China's fertility transition (Wolf 1986; Lee and Feng 1999). All modern contraceptive methods were legalized in the 1950s and were available by the early 1970s (Tien 1991). China's fertility decline depended heavily on IUD insertions, followed by female sterilization, and then abortion if the first two methods were not used or were ineffective (Banister 1987; Tu and Smith 1995; Scharping 2003).¹⁵

There are no reliable data on contraceptive use before the 1980s. Fragmentary data indicate that IUDs outnumbered sterilization as the leading contraceptive method in the 1960s and 1970s (Banister 1987). The prevalences of IUDs and sterilization were 35 per cent and 17 per cent among married women aged 15 to 49 in 1982 (Poston 1986); in 1992, the prevalence of sterilization caught up with that of IUDs, with 35 per cent of women sterilized and 34 per cent using IUDs; by 1999 the percentage of women with IUDs rose to 41 while that of sterilized women remained at 35 per cent. Male sterilization increased modestly from seven per cent in 1982 to 10 per cent in 1992, then declined to eight per cent in 1999 (Scharping 2003). IUD acceptors were younger

and of lower parity; older women and women who had at least two children tended to use sterilization (Tien 1991; Short, Ma and Yu 2000; Wang and Altman 2002).¹⁶

Induced abortion was legalized in 1957 and has been widely practised in China since the 1970s as a 'remedial measure' for failed contraception (Banister 1987; Wang, Yan and Feng 2003). The estimated abortion rates increased from 28 abortions per 1,000 women aged 15 to 44 in 1975 to 55 in 1982 when the birth control policy was intensified (Henshaw, Singh and Hass 1999), and then decreased to 20 in 1999 (Chen 2004). A disturbing demographic issue since the mid-1980s is the spread of sex-selective abortions which has contributed to increasingly abnormal sex ratios at birth in the nation as a whole (Zeng et al. 1993; Banister 2004).¹⁷

The social context

China is distinctive in relying on IUDs as one of the predominant contraceptive methods along with female sterilization. The social context promoting these methods, as well as induced abortion, can be seen in the state's birth control policy and practices, the support of the medical profession, and the lack of an independent women's movement.

China had two short-lived birth control campaigns in the 1950s and 1960s that were driven by the fear that population growth would hinder economic development (Banister 1987). During this period, fertility declined in urban areas as a result of increased access to contraceptives and abortion. But the campaign had little effect on most rural areas, which were ill-equipped to provide family planning services. By the end of the 1960s, few people in the central government doubted the importance of population control for economic development. In 1971, the first national birth control campaign began with the slogan of 'later-longer-fewer,' promoting late marriage, longer spacing, and few children. Fertility went down rapidly through the expansion of family planning programs to rural areas (Banister 1987). By the late 1970s, the government recognized that demographic momentum would fuel population growth for generations to come, and believed that such population momentum could derail China's goal of achieving modernization and prosperity (Scharping 2003). In 1979, a stringent one-child policy was launched which set the goal of limiting population to 1.2 billion by 2000.

The Chinese medical establishment, in support of the state's birth control policy, considered permanent methods as the most effective means of fertility control for a vast majority of rural and uneducated people (Tien 1991; Scharping 2003). Male and female sterilizations were promoted from the mid-1960s (Banister 1987). Despite the effort to promote vasectomy, the level of acceptance has been relatively low (Tien 1991). During the decade after 1968, millions of barefoot doctors, midwives and health aides were trained to provide IUD insertions and abortions in village clinics or homes (Banister 1987). Female sterilizations were usually done in hospitals by physicians or in villages by mobile medical teams, but the rural health system during this early period was not sufficient to provide such medical procedures widely. Unlike those of other countries in this study, the government bears the financial burden of the family planning programs, and medical professionals in China do not benefit directly from service provision (Banister 1987). In spite of the big gaps in rural medical networks evident in the 1980s, the state has shunned turning to privatization as the way out for family planning. A number of recent regulations expressly bar physicians from privately performing contraceptive surgery (Scharping 2003).

By the early 1980s, the state established a set of parity-driven regulations for compulsory contraceptive use to implement the one-child policy. IUD insertion was required for women after the first birth and male or female sterilization for couples who had two or more children. Induced abortion was provided for out-of-plan pregnancies (Banister 1987).¹⁸ The birth-control policy and programs encountered strong resistance from rural couples. In the absence of social security in rural areas, couples rely on grown sons for old-age support rather than daughters who usually leave their natal families after marriage. The need for old-age support, reinforced by the deep-rooted son preference, makes the goal of 'one child for each couple' untenable (Greenhalgh and Li 1995). As a result, in 1984, the state modified the policy by allowing rural couples whose first child is a girl to have a second child (White 1994). The *de facto* two-child policy stipulates at least four years' duration between the first and the second children. Accordingly, there is widespread adoption of IUDs for birth spacing, especially among women who do not have a son (Tu and Smith 1995). Despite the substantial increase of female sterilization after two special campaigns in the 1980s (Hardee-Cleaveland and Banister 1988), the IUD has been the prominent method since the late 1990s.

Induced abortion has been used as a backup method in the case of contraceptive failure. Owing to the high usage of poor-quality stainless-steel rings, one of the major causes of abortion was IUD failure (Kaufman *et al.* 1992; Wang *et al.* 2003). In 1982, 34 per cent of all abortions were the result of such failure (Kaufman 1993). By 1992, steel rings still accounted for about 90 per cent of the IUDs. The ban on steel rings and the introduction of copper devices have reduced the problem of high failure rates to some extent (Scharping 2003; WHO 2003). It is not clear whether the recent decrease in abortion rates, noted earlier, reflects the introduction of quality-of-care family planning programs or results from incomplete reporting of medical and private-sector abortions (Henshaw *et al.* 1999).

The high incidence of sex-selective abortions since the mid-1980s, while linked to a strong son preference and the birth control policy and made possible by the availability of modern technology, is enhanced by the interests of profit-driven medical professionals (Zeng *et al.* 1993; Croll 2000; Chu 2001). Although sex identification was strictly banned, the increasing privatization of rural healthcare systems since the 1980s – which are distinct from state-run family planning systems – made it difficult for the government to police it. The lack of local funding for health services encouraged the misuse of 'ultrasound B' machines because the profits can be used to finance such services and also supplement the incomes of private medical practitioners (Croll 2000). Driven by material incentives and private connections, even medical professionals in public hospitals provided prenatal sex determination (Chu 2001).

Because of the lack of an independent voice of the state-led women's movement, mainstream women's groups played a limited role in promoting women's reproductive health and rights (Greenhalgh 2001). In fact, in many rural areas, the local government relied on grassroots women's organizations to implement the family planning program. After 1995, the mainstream women's movement called for a campaign against sex-selective abortion and, more broadly, an end to discrimination against girls through legal protection and community intervention (Croll 2000). However, the ratio of males to females at birth continues to rise in recent years and it remains to be seen whether the involvement of the mainstream women's organizations in this issue will effectively improve girls' survival in the long run (Banister 2004).

India's steady fertility decline during increased economic growth

Despite being the first developing country to launch an official family planning initiative in 1952 when the total fertility rate was 6.0, India's fertility decline has been slow, and the country is still undergoing its first demographic transition. The greatest decrease in the total fertility rate was during the 1980s (from 4.5 in 1981 to 3.6 in 1991), a decade characterized by increased economic growth, reaching 3.1 children per woman in 2001 (IIPS 1995).¹⁹ Net migration has been negligible during this period. Infant mortality declined steadily from 122.0 per 1000 births in 1978 to 72.5 in 1991 and 58.0 in 2004 (United Nations 1982; Haub and Sharma 2006). The singulate mean age at marriage for females has been increasing: 18.4 years in 1981, 19.3 in 1991, and 19.7 in 1998–99 (Das and Dey 1998; IIPS 2001).

The predominant birth control response: sterilization

Sterilization, particularly female sterilization, was the major contributor to India's fertility decline during the 1980s (Desai 1998; Visaria 2000). Although the method had been available since 1952, the pendulum swung from an emphasis on female to male and then back to female sterilization over the next few decades, reflecting programmatic changes (Srinivasan 1995; Presser 1970).²⁰ In 1992–93, 27 per cent of currently married women between the ages of 15 and 49 were sterilized, an increase from 20 per cent in 1980; of these, 82 per cent did not use any method of contraception before sterilization (Ross 1992; IIPS 1995). The practice of vasectomy was small (3%), as was the pill (1%), IUDs and condoms (2% each) or any of the traditional methods (4%). It was the vast numbers of lower-class women who relied on female sterilization, whereas upper-class women used spacing methods such as IUDs, periodic abstinence, or withdrawal (Rele, Kapoor and Khan 1989; Basu 2005). The demographic impact of sterilization was reduced by its late timing, but during the 1980s it was enhanced by the fact that acceptors became younger, a drop from 30.3 years in 1981 to 28.7 in 1991, and were of lower parity, from 3.6 to 3.1 children (Gupta *et al.* 1996).

Induced abortion was legalized in 1971 for maternal health purposes, to be performed free of charge in government-approved institutions by authorized physicians only (Balakrishnan 1994). The official rate has fluctuated slightly over the decades: 0.8 abortions per 1000 women in 1975, 2.5 in 1980, 3.3 in 1990, and 2.7 in 1996 (Henshaw *et al.* 1999); but unofficial estimates of induced abortions, legal and illegal, are predicted to be about two to five times higher (Chhabra and Nuna 1994).²¹ In particular, there is large underreporting of sex-selective abortions and premarital abortions that are carried out in the private sector.

The social context

Antinatalist state policy, the medical community, and leading international population organizations endorsed sterilization as well as induced abortion (Bose 1995).

Sterilization was not the state's principal response to the fertility problem in the early years of the family planning movement because of the medical complications and the high costs involved; besides, medical doctors were not trained to perform the operation. Other spacing methods ranging from periodic abstinence to IUDs were preferred (Visaria and Chari 1998; Harkavy 1995). However, when faced with droughts in 1965 and 1967, economic stagnation, the increased probability of infant survival, and an impending 'population explosion', the state sought to reduce the population growth permanently through non-reversible-method-specific steriliza-

tion targets (Harkavy 1995).²² The Indian medical establishment enthusiastically supported the state's decision because, as in the case of Puerto Rico, it saw sterilization as an effective recourse for a disproportionately illiterate and rural society that could not fully understand or correctly use other sophisticated modern methods, but whose fertility needed to be controlled (Bahadur 1977; Bose 1995). Also, disillusionment with complicated Western spacing methods such as pills and IUDs that required constant use, monitoring, and infrastructure, and were not sensitive to local Indian conditions such as the lack of water, sanitation, lighting and privacy, further promoted sterilization (Minkler 1977; Harkavy 1995).²³

After a chaotic experience with vasectomy during the 1970s that entailed both coercion and incentives, the re-elected Congress government refocused from men to women as a demographic target group (Visaria 2000). Female sterilization, particularly among rural women, rose steadily through the 1980s and became the dominant birth control method (Desai 1998).²⁴ The shift to women has been attributed to the introduction of laparoscopic ligation which was quick, did not require general anaesthesia or a stay in hospital, and was safe even under camp conditions, compared to postpartum sterilization; men's increased reluctance to get sterilized after the Emergency experience was also significant (Srinivasan 1995). Physicians benefited greatly from the change in focus from male to female sterilization because of the higher fees for the latter operation (Bose 1995; Hartmann 1995); contrary to those in Japan, they did not have high monetary gains from prescribing government-subsidized pills.

The demographic impact of induced abortion in India seems to have been slight, unlike the situation in Japan and Russia, although sex-selective abortions may be contributing to its effect (Retherford and Roy 2003).²⁵ The 1971 Medical Termination of Pregnancy Act significantly broadened the legal indications for abortion after more than a century of its being banned by the Indian Penal System (Act No. 45 of 1860), unless medically advised to save a woman's life. Thereafter, abortions could also be performed in cases of foetal diseases and deformities, economic deprivation, rape and incest, as well as grave physical and mental injury to a woman due to contraceptive failure. Physicians, along with the population establishment, were avid supporters of the Act because of professional interests in lowering the birth rate and reducing the adverse effects of unsafe and illegal abortions on women's health (Balakrishnan 1994).

In 1975, the All India Institute of Medical Sciences introduced amniocentesis in order to detect prenatal genetic abnormalities; this, however, was increasingly misused to identify and abort female foetuses. Between 1977 and 1985, the state, at the behest of the Indian Council of Medical Research, passed three orders prohibiting the use of amniocentesis for sex determination purposes in government hospitals (Balakrishnan 1994). Banning led to commercialization because, as in the case of sterilization, the medical profession had much to gain financially, especially in a society that believes that a son is necessary for a family (Bose 1995). Thus, as in the case of China, with modern technology, sex-selective abortion has been used to terminate large numbers of unwanted female foetuses. This is evident from the skewed sex ratios at birth in some Indian states, ranging from 105 boys:100 girls in Tamil Nadu to 129:100 in Punjab, and in the country overall (113:100) in 2001–2003 (Balakrishnan 1994; Haub and Sharma 2006).

Several individuals and non-governmental women's groups, such as the Stree Shakti Sanghatna, objected to the human rights violation evident within the

government-sponsored family planning program and its emphasis on sterilization, clinical trials of new contraceptive technologies, and poor quality of care, but often with little success (Calman 1992; Gandhi and Shah 1992). In the 1980s, feminists saw the promotion of injectables such as Depo Provera, Net-en, and Quinacrine, the pill, or implants like Norplant, as violations of proper ethical propositions or as subversive and hegemonic acts perpetrated by a colluding state, the international population establishment, and Western countries (Ravindram 1993; Ray and Basu 1999). In the case of sex-selective abortion, after years of demonstrations against government apathy and tolerance, the Forum Against Sex Determination and Sex Pre-selection, a broad-based coalition of women's groups, civil-liberties groups, and health organizations created in 1984, was successful in getting the procedure banned in the state of Maharashtra in 1987 and across India in 1994. However, some loopholes in the MTP Act remain, and proscriptions of this procedure have made the tests costlier as they go underground (Balakrishnan 1994).

Finally, religion has not emerged as an impediment in the practice or legalization of birth control, although Kingsley Davis argued that 'opposition to birth control in India and Pakistan may ... be expected on both religious [Hindu and Islamic] and moral grounds' (Davis 1951: 229). Hinduism preaches *ahimsa* (non-injury), *kismet* (fate), and the cycle of *karma* (the law of cause and effect), powerful doctrines that could discourage the use of sterilization and abortion. However, Fagley argues: 'there is enough flexibility in the Eastern faiths for modern reformers to put forward the case for scientific methods of family planning' (Fagley 1967: 81, quoted in Presser 1970: 20). It is only as recently as 2001 that religious heads have rallied against sex-selective abortion, but not against the practice of abortion or sterilization.

Cameroon at the start of the transition

Cameroon is the least developed country discussed in this paper with the lowest per capita GDP, highest fertility, and weakest governmental and civil society infrastructure for promoting a national population policy. During the 1990s, Cameroon's total fertility rate decreased from 5.8 in 1991 to 5.0 children in 2004 despite financial crisis and no decreases in infant mortality (Balépa, Fotso and Barrère 1992; Endeley 2001; ORC Macro 2005; INS and ORC Macro 2005). Marriage is nearly universal, although age at first union has increased from 16.5 in 1991 to 17.6 in 2004 (ORC Macro 2005). Despite continued high fertility, Cameroon has virtually no net-migration (United Nations 2001).

The minimal birth control response

Recent trends in contraceptive use contributed to the recent decline in fertility; nonetheless, contraceptive use remains low. Among married women, current use of any method increased from 16.1 per cent in 1991, to 19.3 per cent in 1998, to 26.1 per cent in 2004 (Balépa et al. 1992; INS and ORC Macro 2005). Periodic abstinence is the most common method of family planning currently used, particularly among unmarried sexually active women. In 2004, 65 per cent of sexually active unmarried women aged 15–19 years and 77 per cent of unmarried women aged 20–24 reported that they had ever used periodic abstinence. Condom use, which also provides protection from HIV, is a secondary method of family planning: 7.6 per cent of married women report current use and 31.9 per cent of all women report ever use (INS and ORC Macro 2005).

To understand the social context at this early stage of the demographic transition, it is relevant to consider factors that support sustained high fertility as well as those that encourage lower fertility.

The social context

As a former colony, Cameroon has a family planning movement which has been influenced by a combination of colonial, domestic, and international policies. In the mid-1980s Cameroon entered into Structural Adjustment Programs (SAPs) administered by the World Bank. SAPs cut excesses in the national budget, which led to reduced funding for national health (UN 2000). By 2000, most of the funding for reproductive health services came from international donors (Tantchou and Wilson 2000).

Despite historically being pronatalist, the Cameroonian government currently sees the population growth rate as too high and is implementing interventions to slow the growth rate (Tantchou and Wilson 2000; Population Reference Bureau 2002). Contraception was illegal in Cameroon from 1920 until 1980 (Center for Reproductive Law 1999). In 1992 the government population policy set out to promote responsible parenting, to reduce adolescent pregnancy, and to reduce unwanted pregnancy (Elvire Beleoken, Nfon Priso and Nfon Priso 2000). By 1996, contraceptives were listed as an essential drug under the national health system (Tantchou and Wilson 2000). The government of Cameroon currently has less than five per cent of the national budget allocated for health activities, one aspect of which is family planning (Tantchou and Wilson 2000).

A large proportion of Cameroonian education has been provided through missionaries (Kirk 1996; Robertson 1986), giving institutionalized religion, and Catholicism in particular, a major role in the socialization of children into family life, and, more importantly family planning. The Catholic Church does not approve of artificial birth control and teaches periodic abstinence in Cameroonian schools (Johnson-Hanks 2002). The low uptake of modern contraception and the continued use of 'traditional' methods, such as periodic abstinence, even among the highly educated, are consistent with the Church's sanction on contraception.

Cameroon has an estimated HIV prevalence rate of 5.5 per cent for adults aged 15 to 49 as measured from the 2004 Demographic and Health Survey (INS and ORC Macro 2005). HIV prevalence is highest among women in their prime reproductive years, increasing sharply from 2.2 per cent among women aged 15 to 19 to 10.3 per cent among women aged 25 to 29. Finally, 5.1 per cent of the couples for whom HIV data were available were serodiscordant (ORC Macro 2005). The promotion of condoms as a dual method, one that prevents both pregnancy and HIV transmission, may be important in the later stages of Cameroon's fertility transition given the level of serodiscordance in the population. Consistent with this promotion and despite rejection from the Catholic Church, the percentage of women who had ever used condoms increased from 8.8 in 1991 to 31.9 in 2004 (ORC Macro 2005).

Little official information is available about the role of abortion in Cameroon's fertility decline because both the sale of abortive agents and written information on abortion are illegal (Center for Reproductive Law 1999). While abortion is not available upon request, the law allows exceptions: the procedure is permitted to save women's lives, to preserve mental or physical health, and in the case of rape or incest. Illegal abortions occur and often are performed by untrained practitioners using chemicals obtained at local pharmacies (Johnson-Hanks 2000). The total crude abortion rate has

been estimated to be at least 19 per thousand woman-years of life (Johnson-Hanks 2000). It appears that there is a sequence of birth control methods in Cameroon: most women who had abortions reported that they resort to abortion after contraceptive failures (Johnson-Hanks 2000). This suggests that the common practice of periodic abstinence, promoted by the church and government, may be a factor in the high rate of abortion and abortion-related injuries in Cameroon.

Sterilization was legalized in 1997, although strictly regulated. In order for a woman to be eligible for sterilization she has to be over 35, have more than five children, her partner must consent, and she has to wait the mandatory period (Center for Reproductive Law 1999). Sterilization remains rare in Cameroon with only 0.9 per cent of married women aged 15 to 49 reporting female sterilization (INS and ORC Macro 2005).

There is little consensus as to what effect the AIDS epidemic will have on fertility rates in sub-Saharan Africa. An increase in infant mortality in countries with generalized epidemics is probably due to HIV (Hill *et al.* 2001). Cameroon has experienced an increase in infant mortality from 64.3 deaths per 1000 live births in 1991 to 77.0 in 1998, remaining high, at 74.1 per 1000 in 2004 (Balépa *et al.* 1992; Fotso *et al.* 1999; ORC Macro 2005). Parental perceptions of high infant and child mortality tend to result in insurance behaviour that causes fertility to be higher than when child survival is greater (Cohen and Montgomery 1998). However, there is yet to be any evidence of replacement or insurance effects for families who have lost children through HIV, or of how these effects may vary by a country's stage in the fertility transition. On the other hand, there is evidence that women who are HIV-positive experience lower fertility (Lee *et al.* 2000; Terceira *et al.* 2003).

The medical establishment and the women's movement had little effect on fertility and contraceptive use in Cameroon. Women's participation in the national family planning movement was probably limited because women's groups were focused on other issues: obtaining needed clinics, better water systems, health education, and literacy classes (Chilver 1992). However, these basic needs have yet to be met. While Western feminists may argue that freedom from unwanted pregnancy is also a basic need, in certain social contexts the benefit from having children may still outweigh the costs of childrearing (Calvès and Meekers 1997).

Summary and conclusions

In sum, we found the following for each of the countries.

In Japan, the legalization of abortion soon after World War II and the strong support of the medical profession were critical contextual factors facilitating a rapid decline in fertility. With abortion as an accessible and widely used backup to condom use, the need for sterilization or the pill (when it became available) was not essential for an effective antinatalist state policy. Physician support was enhanced by the fact that doctors profited by providing abortions. In the 1970s, a new religious group opposed abortion, which, in turn, generated opposition from pro-abortion women's groups, but neither faction was significant in promoting alternative methods of birth control. Indeed, women's groups were initially opposed to oral contraception. Despite the recent legalization of the low-dose pill, abortion and condom use remain the predominant birth control methods. The Japanese government is no longer antinatalist; rather it is concerned about the very low level of fertility and the resulting aging of the population (Hewitt 2003).

Much as in Japan, Russia's early state policy legalizing abortion and strong support of the medical profession were significant factors in the widespread practice of abortion. By the 1990s, Russia was experiencing below-replacement fertility, with high levels of both abortion and IUD use. During this decade, family planning programs and availability of modern methods of contraception increased, reducing the abortion rate. International pharmaceutical companies exploiting Russia's market system may be contributing to the increasing use of the pill. Religious opposition to abortion is also growing, but financial incentives associated with abortion persist for the medical community. While the abortion rate may be declining in Russia, it remains one of the highest in the world.

Whereas Japan and Russia did not have to contend with religious opposition to birth control, and particularly sterilization, this was not the case for Puerto Rico, a predominantly Catholic country. Yet the Puerto Rican post-World War II experience demonstrates that when women are highly motivated to control fertility, with improved employment opportunities, and the only effective method available is female sterilization, introduced by physicians practising in private hospitals with a *laissez-faire* government policy, religious views can take second place to economic aspirations. Physicians profited substantially from privately performed postpartum sterilizations, which had many restrictions in public hospitals. Feminist and leftist organizations committed to independence were opposed to sterilization, yet did little to promote other birth control methods. Today, even with the availability of the pill and the legalization of abortion, female sterilization has been institutionalized as the predominant method of choice, contributing to Puerto Rico's current replacement level of fertility.

With regard to China, several contextual factors account for the primacy of IUDs, sterilization, and abortion that brought about China's dramatic fertility decline over the past three decades, now below replacement. The state's birth control policy, still operative, stands out as the most important. This policy heavily relies on the sequential use of IUDs and sterilization, with abortion as a 'remedial measure' in case of contraceptive failure. The spread of sex-selective abortion is sustained by profit-seeking medical professionals. The mainstream women's groups have strong concern about sex selection, but they do little in advocating women's reproductive rights and choice, given that such groups are state-controlled. Religion has no effect on state policy.

India, like Puerto Rico, relied on sterilization as the primary birth control method. The antinatalist state and the medical profession endorsed the use of sterilization to permanently reduce population growth and family size. In the 1980s, when fertility decline was most rapid, the state's family planning program aggressively practised female sterilization, after previously promoting male sterilization. Abortion, initially legalized to serve as a spacing method, has also become a means of achieving sex preference, resulting in greater discrimination against females. Although religious and women's groups have opposed sex-selective abortion, they have been less vocal against sterilization over the decades. India's current fertility level is still above replacement.

Cameroon has the highest fertility among the countries considered, just entering the first demographic transition. It is the only country in this study that has a high HIV prevalence rate. It remains to be seen how this will affect the nature of the transition. The predominant method of controlling fertility is periodic abstinence (the

rhythm method), which is promoted by the Catholic Church but provides no protection against HIV transmission. The Catholic Church's negative response to condom promotion serves to keep transmission of HIV and fertility higher than if condoms were acceptable to the Church, whereas the adoption of abstinence or condom use by individuals to reduce the risk of HIV serves to lower fertility. Further, there is no indication whether there will be a fertility response to the increasing mortality.

Two distinct stories emerge from these case studies. One is the multifaceted nature of the social context that supports the predominance of certain birth control methods that bring about fertility decline, even when operative under different economic situations and for highly centralized as well as decentralized societies. Second, even though social contexts are by definition country-specific, the case studies suggest some overriding similarities.

First, we have seen that despite the variation in economic, political and demographic contexts and the different time periods, all five countries that have undergone at least moderate fertility decline relied on medical procedures as their primary methods: abortion, IUD and sterilization.²⁶ This fact clearly means that the effort to reduce fertility in these countries had the strong support of the medical establishment: the physicians. While this connection is not surprising, the reason for such support is often overlooked. Physicians in general may have been ideologically sympathetic to promoting birth control, but they were also responding to significant financial incentives. The importance of such incentives is consistent with what Martine (1996) has reported for Brazil, with its high prevalence of sterilization and Caesarean deliveries, jointly performed to the financial benefit of physicians.²⁷

Second, for medical methods to be widely and effectively practised to significantly control fertility at low levels, state support is essential, even if, as in Puerto Rico, it is informal support with a *laissez-faire* approach, relying heavily on private funding. The incentives for initial state support in most of these countries, whether for abortion, sterilization, or the IUD, is the desire to reduce the country's fertility; the primary official rationale for Russia was that this would liberate women, consistent with the state's need for women in the labour force.

What factors are suggested by these case studies as relevant in determining whether countries rely on a particular medical method, alone or in combination with other methods? We have seen that in Puerto Rico and India sterilization was favoured as an effective birth control method at the time of the first demographic transition. It was a one-time procedure that was viewed as highly appropriate for uneducated women (and men, when promoted in India), and with the support of the medical profession, could be done without effective religious opposition even in a Catholic country (as in Puerto Rico). It is not, however, a method that can be used for spacing, and thus its demographic effectiveness is very sensitive to the age and parity of those sterilized; it was more effective in Puerto Rico than in India because of earlier timing.

Abortion, in contrast to sterilization, can be used effectively to postpone child-bearing and for birth spacing. When Japan and Russia adopted this method before the availability of modern methods of contraception, namely the pill, it was hard to promote modern contraceptives, unless incentives for physicians were maintained. An 'abortion culture' became pervasive. In China and India, abortion for sex selection is a new dimension of its practice, but also sustained by the financial incentives to physicians and others in the medical community.

The IUD is one of the predominant methods in the two socialist states, Russia and China. It is a highly effective method that allows for spacing. India experimented with the method, but the medical professionals' dislike for the method, with its many complications in the absence of an adequate infrastructure, resulted in campaigns against it (Srinivasan 1995). Other countries, Puerto Rico and Japan, had culturally institutionalized sterilization and abortion respectively into their societies before the IUD was available. This is relevant as well with regard to pill use, particularly in Japan. The experience of all five countries lends support to Potter's (1999) thesis of path dependency: that a momentum develops against changing from the birth control methods initially introduced regardless of the availability of more advantageous options. In all countries except Cameroon, this momentum is reinforced when the medical community directly benefits financially from the status quo. In Cameroon, the momentum for using a 'traditional' method is reinforced by the support of the Catholic Church and the association of the method with an honourable and modern identity (Johnson-Hanks 2002).

For all countries under study in this paper, the role of women's groups in generating social support for specific methods of birth control is not strong, even though there are substantial differences in the organization, independence, and strength of women's movements in these countries. Nor has religious opposition been strong enough to constrain the practice of methods for any of the countries except Cameroon, which is early in the demographic transition, and in economic crisis. In terms of crisis, the Cameroon experience has some parallels to that of Russia, although the high prevalence of HIV in Cameroon paints an even more tragic picture. Private support of family planning through international agencies is of some help to these countries, but does not come near filling the great need. Moreover, the 'population establishment' of today is not as well financed as in the past to provide support, public or private, for population programs in high-fertility countries.

To conclude, these case studies generate interest in further elaboration of Kingsley Davis's thesis of change and response, delving more systematically into the multifaceted nature of the social context that helps to explain which set of multifaceted birth control responses occur in various countries and why. Our sample of countries is not internationally representative and our generalizations are specific to the countries studied. A broader comparative analysis, one that expands on the contextual factors as well as the countries and includes counter examples to the experiences we have discussed, should help us to develop a better theory of change and response that rigorously considers the relationships between contextual factors and the proximate determinants of fertility. Davis's multifaceted responses could well entail multifaceted societal explanations.

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Notes

- 1 Bulatao's (1989) framework for contraceptive choice, which deals with goals, competence, access, and evaluation, is essentially an individual-choice framework and gives relatively little attention to societal factors such as state policy and the medical establishment.
- 2 An HIV epidemic is defined as a generalized epidemic when 5 per cent or more of women attending urban antenatal clinics are infected (World Bank 1997).
- 3 Official statistics on abortion in Japan are known to be incomplete. Muramatsu (1974) has estimated it to be about three times higher than actually reported. Underreporting by physicians is attributed both to their avoidance of income tax payments and to protecting women's confidentiality (Goto et al. 2000).
- 4 It has been argued that 'Japanese couples' extensive reliance on condoms results largely from the unavailability of other methods, in a cultural context of embarrassment and passivity toward contraception' (Coleman 1981: 29).
- 5 In Japan this group is called *Nihon Bosei Hogo I Kyokai* or *Nichibo* for short.
- 6 In 1972, a proposed revision was to delete the economic reasons clause but allow abortion if the foetus was suspected of having a serious mental or physical defect. This revision was sponsored by a new religious group called *Seicho no ie* (Home of Life) and conservative members of the Liberal Democratic Party. In 1982, the economic reasons clause again came under fire. However, this time it did not mention 'fetal disability'. Ogino (2004: 11) notes: 'It is rumored that there was close contact between Seicho no ie and the Moral Majority and the Pro-Life movement in the United States'. The problematic nature of the Eugenic Protection Law was brought to international attention in 1994 at the United Nations ICPD, and as a result, in 1996 all clauses referring to people with disabilities were removed and the name of the law changed to the Maternal Protection Law (Ogino 2004).
- 7 Until 1998, net migration compensated for about half of the natural decrease, but migration has slowed in recent years and now does little to offset Russia's population decline (Heleñiak 2001).
- 8 Although Russia's abortion regulations are still permissive, in 2003 Russia increased restrictions on abortion for the first time since the 1950s.
- 9 Migration rates are hard to estimate among Puerto Ricans, since they are US citizens and can freely move from the island to the mainland, and back, without going through immigration. But it is estimated that between 1940 and 1960, the outflow of population was equal to the potential growth of the island's population as a result of fertility (Hernandez Alvarez 1967). Return migration in more recent decades has been substantial; indeed, the flow in both directions fluctuates with economic conditions on the mainland.
- 10 Before *Roe v Wade*, many women from the mainland US went to Puerto Rico for an illegal abortion, especially after Cuba was no longer an option; this illegal activity was highly profitable to abortionists who charged much higher fees to mainlanders (de Arellano and Siepp 1983).
- 11 Field experiments with the contraceptive pill and the IUD were conducted in Puerto Rico in the late 1950s and early 1960s, before their availability for commercial use. Although several thousand women participated in these experiments, they did not constitute a large proportion of the total population (Presser 1973).
- 12 The FPAPR was charged a group rate for sterilizations that it referred to hospitals: \$75 for each female sterilization and \$15 for each male sterilization. This was very low compared to the individual rates charged by physicians; in 1967, one hospital reported a fee of \$135 for sterilization alone and \$190 for sterilization and delivery (the most common procedure), plus the physician's fee. Over a third of the sterilizations the FPAPR subsidized between 1956 and 1966 were male sterilizations, promoted by a physician who tried to persuade couples initially asking for female sterilization to instead opt for male sterilization, largely because it was a simpler procedure and cost less (Presser 1973).

- 13 In contrast to the history of birth control in Puerto Rico, efforts to promote large-scale emigration of Puerto Ricans from the island to the mainland, to constrain population growth, did not receive significant opposition. 'Operation Bootstrap,' which began in 1947, was strongly supported by both the Puerto Rican and mainland US governments, and the world experienced for the first time vast mass migration by air, often paid for in instalments and without ideological concerns. Yet one of the lessons learned in this regard is that migration is reversible (Hernandez Alvarez 1967), and poverty remains pervasive in Puerto Rico.
- 14 Delaying marriage is an important element of the national family planning policy and China's fertility decline, especially during the period of the later-longer-fewer policy started in 1971 (Lee and Feng 1999; Banister 1987).
- 15 Despite the availability of modern contraceptive methods other than IUD and sterilization, they have not been widely used. The prevalence of oral pills and injectables was 5.9 per cent, and of condoms 1.4 per cent, in 1982; 3.1 per cent and 1.5 per cent in 1992; 2.3 per cent and 3.5 per cent in 1999 (Scharping 2003).
- 16 In 1992, prevalence of sterilization among married women was 7.6 per cent for age group 20–24, 26.2 per cent for age group 25–29, 40.4 per cent for age group 30–34, and about 50 per cent for age group 35–44 (Scharping 2003).
- 17 The estimated sex ratio at birth in China was close to normal from the 1960s to the early 1980s and increased rapidly thereafter: 108.5 males per 100 females in 1981 (Zeng *et al.* 1993), 111.8 in 1990, and 117.8 in 2000 (Banister 2004; Chu 2001). It rose progressively at higher-order births: in 2000, the sex ratio for first births was 107, but it increased markedly to 152 for second births and 160 for third births (Banister 2004).
- 18 Couples have been required to obtain official permission from local family planning officials for pregnancies and births. Unauthorized pregnancies or births have been considered 'out-of-plan' (Banister 1987).
- 19 However, regional differences, rural–urban well as southern–northern, persist (Kurian 2000). For example, in 1992–93, the total fertility rate of southern states ranged between 2.1 and 3.1 children per woman of reproductive age, while that for northern states was between 4.3 and 5.5 (IIPS 1995).
- 20 As a percentage of total sterilizations, female sterilization was particularly high during the late 1950s, but dropped in the 1960s when the government shifted its focus to vasectomy (90 per cent of all sterilizations in 1967–68) and introduced the IUD and pill (Presser 1970). From the 1980s, the trend again reversed, with almost 90 per cent of all sterilizations being performed on women. During 1980–89, the use of other non-terminal methods increased negligibly, while the use of male sterilization declined (Pathak, Feeney, and Luther 1998; IIPS 1995).
- 21 In 1991–92, out of the approximately 6.7 million induced abortions, only 600,000 were legally performed within the public health system (Chhabra and Nuna 1994).
- 22 Starting in 1966, the newly-created Department of Family Planning in New Delhi decided on contraceptive-specific targets of sterilizations, IUD insertions, and condom users (and later oral pills), which were then relayed through several channels to the grassroots workers at the subcentre level. Contraceptive acceptors were given incentive payments. Supervisors at successive levels monitored the achievement of these targets in order to judge the success of the program (Panandiker and Umashankar 1994).
- 23 By the end of the 1960s, the Indian government became disillusioned with massive programs designed and financed by foreign donors and implemented by foreign advisors (Minkler 1977). It also cooled its relations with the United States after President Nixon tilted US policy toward Pakistan in the 1965 Indo-Pakistan war. Thus, using the watchword of 'self-reliance,' Indian Prime Minister Indira Gandhi ordered USAID to close its population office in New Delhi on 1 January 1973, thus temporarily reducing access to other modern methods (Harkavy 1995).
- 24 Sterilization, part of the 'cafeteria' approach, is far from a non-directed alternative. Three other birth control methods are available under the family planning program: IUDs,

- condoms, and oral pills. Traditional and natural methods were not a part of the government campaign. A Program of Social Marketing of Oral Pills was initiated in 1987, but has not become popular.
- 25 There has been no assessment of the extent to which future births that are male substitute for the aborting of female foetuses.
 - 26 Again, these countries were not chosen to be representative of all countries or even a subset; rather they reflect the authors' special interests in them and we have put them together for comparative analysis.
 - 27 Brazilian physicians receive substantially more for Caesareans than for natural childbirth, and to encourage this option in publicly-subsidized hospitals and clinics, provide free sterilization, which is not covered by the public health system (Martine 1996).

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