established global communication networks that, with the addition of faxes, modems, and new computer technology, can rapidly be upgraded to a communication superhighway for education and science worldwide. Frank Press, immediate past-president of the U.S. National Academy of Sciences, has argued that "if UNESCO didn't exist, we would have invented it today" because the many pressing educational and scientific problems that confront the United States are global in nature. UNESCO programs are vital and important for all U.S. citizens, and the time is right for the educational and scientific communities of the United States to join in advocating a return by this country to UNESCO.

Birth Control in Japan: Realities and Prognosis

Mariko Jitsukawa and Carl Djerassi

Why does Japan not legalize the use of steroid oral contraceptives (OCs)? In early 1992 (*1*), *Koseisho* (the Ministry of Health and Welfare) indefinitely postponed approval of the internationally used low-dose OCs (consisting of a synthetic progestin and the estrogen 17α-ethynylestradiol) despite the positive recommendation in 1986 of its own medical advisory committee and the completion of the requisite clinical studies (*2*) among some 5000 Japanese volunteers, which replicated earlier findings accumulated among millions of women abroad.

The continuing ban has been attributed to concern that legalization of OCs would degrade sexual mores and to the medical community's fear of losing several hundred million dollars derived from performing abortions (*3*)—income that is frequently undisclosed to tax authorities by evasion of legally required reports of abortions to *Koseisho*. Yet 0.5 to 0.8 million Japanese women are estimated to use high-dose therapeutic Pills (approved for menstrual disorders) for contraceptive purposes (*4*). Because of the ban on low-dose contraceptive Pills, these women are risking negative side effects (particularly in the cardiovascular system) that could be minimized with the legalization of the low-dose formulation (*5*). Worse, no package inserts on the consequences of long-term consumption are furnished, because manufacturers are legally prohibited from providing such information about unauthorized (that is, contraceptive) use (*6*).

AIDS and Oral Contraceptives

Despite convincingly satisfactory clinical tests (*2*), the anticipated approval of OCs was suspended because of the Japanese government's alarmed response to *Koseisho's* AIDS Surveillance Committee's report (*7*) of 238 new HIV-positive cases in 1991. The government concluded that legalization of OCs would discourage condom use, in spite of data (*8*) that unexpectedly showed that many Japanese do not use condoms in a way that would prevent the spread of sexually transmitted diseases. In May of 1993, in response to appeals by several medical organizations, Health and Welfare Minister Yuuya Niwa concurred that there was no direct relationship between AIDS and OCs (*9*). However, his promise to resolve the stalemate was lost in the political turmoil of July 1993, when the Liberal Democratic Party lost power.

Some Japanese critics of *Koseisho's* decision to table indefinitely the anticipated OC approval cite as the real reason "a mood in the government that any contraceptives should be blocked because of worries regarding the aging of the Japanese population" (*9*). Other recent examples (*10*) strongly support the idea that Japan's present policies on reproduction overwhelmingly focus on procreation rather than contraception, in spite of the fact that there is no industrialized country where the introduction of OCs per se significantly reduced birthrates when abortion was also widely practiced. Given the powerful motives of Japanese citizens to limit fertility, which have accompanied Japan's development toward an industrialized, urbanized, and egalitarian society, the claim that OCs will reduce Japan's birthrate is without merit. In our opinion, suppressing more efficacious contraceptives makes the Japanese government look as if it desired an increase of unwanted pregnancies, hoping that women would not terminate them.

Political and Cultural Background

Before World War II, all birth control methods other than condoms, which were distributed for hygienic purposes to soldiers sent overseas, were prohibited by the Japanese government. As a result, illegal abortions with their dire consequences were rampant, which prompted the Diet to pass the Eugenic Protection Law (EPL, 1948), giving legal grounds for abortion (*11*)—"economic hardship" being added in 1949, although Chapter 29 of the Penal Code (1907), defining abortion as a crime, remained formally intact.

For the first dozen years following the implementation of the EPL, the drop in annual births mirrored the rise in annual abortions (Fig. 1) (*12*). In the 1960s, the direct cause-and-effect relation became less clear, presumably because of increasing use of contraceptive methods, primarily condoms and the *Ogino* calendar rhythm method (the name is that of a Japanese physician) or a combination thereof (*13–15*). Another consequence of the prewar government policy was the suppression of IUD research in Japan (*16*) until the postwar government established new regulations for contraceptives in 1952 (*17*). The 4-year time lag between the availability of legal abortion (1948) and the approval of contraceptive marketing (1952) proved to be critical in Japanese acceptance of abortion as a key component of birth control.

There have been two major attempts (1972 to 73 and 1982 to 83) to eliminate the economic hardship justification of the EPL. A nationalistic religious organization, *Seicho no le*, claimed that this provision gave "irresponsible" women free access to abortion. With its strong political clout, the organization almost got its amendment passed on the second try, but the bill collapsed in chaos after many members of the ruling Liberal Democratic Party signed petitions both for and against the amendment (*18*).

Women's Attitudes Toward the Pill

Seicho no le's challenge prompted Japanese feminists to enter public debate on reproductive rights. Their emphasis on abortion

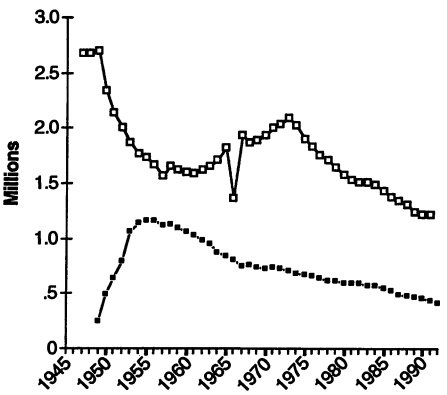

Fig. 1. Trends of births and abortions in the postwar period (*15, 35*). Births are indicated by open boxes; reported cases of abortions are indicated by filled boxes.

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and condoms over more effective female methods, such as OCs, epitomized Japanese women's ambivalence toward modern contraceptives, which perplexed some physicians (9) as well as outside observers (*19*).

Whereas most Western women have considered OCs a means of achieving individual reproductive freedom, many feminists in Japan see the matter differently. They are concerned that the Pill represses women's sexuality by forcing them into a daily medication regimen; and perhaps more important, that the Pill requires women, rather than men, to take full responsibility for birth control, whereas condoms require men's cooperation (*20*). Furthermore, they consider artificial regulation of the natural hormonal cycle with synthetic steroids a violation of bodily ecology through modern (male) technology (*21*).

Many Japanese feminists became politically active in the 1960s when they experimented with the high-dose (therapeutic) Pill for contraception, which initiated their focus on negative side effects (*22*). Because the timing coincided with several deplorable pharmaceutical incidents (such as the birth defects caused by thalidomide), fear of negative side effects of high-dose Pills was amplified by a growing suspicion of pharmaceutical drugs in general. Although low-dose OCs reduced or eliminated most of these negative side effects, Japanese feminists broadened the definition of negative side effects to include "violation of natural rhythm" (*20*).

OCs have a double image problem in Japan. First, women are afraid to be regarded as *sukimono* (sex maniacs), willing to risk their health for sex. In Japan, where vestiges of a Victorian rejection of female sexuality are still prevalent, while the lack of marital sexual life is surprisingly openly discussed, *sukimono* is a social stigma. Second, OCs are automatically associated with negative side effects, although few people can say what they are (*23*). Scientific information about OCs has been blocked because *Monbusho* (the Ministry of Education) has been reluctant to promote sex education, whereas medical professionals cannot distribute information to the public because OCs are not officially approved (*6*). Therefore, the main sources of information are the media, in which women encounter opinions on higher dose Pills but do not learn about low-dose OCs.

These negative opinions about the Pill seem to have influenced Japanese women since the beginning of the OC approval process in 1986 (*24*). According to the biannual *Mainichi Shimbun's* Family Planning Survey (*13*), Japanese women's positive attitudes toward OC legalization declined from 35.4% in 1986 to 22.7% in 1992, whereas ambivalent responses rose from 48.0% to 54.2%. The percentage of respondents interested in taking OCs declined from 12.9% (1986) to 6.9% (1992). Exceptions are women for whom contraception becomes an urgent necessity, generally to limit family size (*25*). Respondents with prior abortions tended to favor the legalization (27.7%) and actual utilization of OCs (11.4%) more, compared with women who had not had an abortion (21.1 and 5.2%, respectively).

Ironically, although the future of OCs in Japan is uncertain—supposedly because of AIDS—the AIDS pandemic has introduced some positive changes there: Journalists are starting to discuss sex seriously, and *Monbusho* has initiated revisions of school curricula to promote AIDS awareness. Perhaps the next generation will be better equipped for educated choices if presented with a wider range of contraceptive options.

New Birth Control Strategy for Japan

Given the almost total dependence in present-day Japan on condoms, rhythm, and abortion (*13*), implementation of the following recommendations would enormously increase the range of contraceptive options available to Japanese women, who deserve more informed choices as well as improved health care—a goal that in the final analysis must, in our opinion, also be the aim of the government. We believe that the following improvements are legally realistic, consistent with current Japanese sexual practices, and implementable within a few years.

First, low-dose OCs should be approved promptly, because no medical obstacles remain to reducing the unnecessary health risks assumed by 500,000 to 800,000 Japanese women who currently use the high-dose therapeutic Pill for contraception (*4*). Such approval will also reduce abortions caused by the failure of other methods.

As a condition for eventual approval of OCs, *Koseisho* has demanded that pharmaceutical companies provide "scientific" evidence for the absence of a causal relationship between the use of OCs and susceptibility to HIV. Such a demand, implying as it does a request for an unthinkably unethical experiment, is most charitably attributable to a misunderstanding of the disease. Because no causal relation between OCs and AIDS has been scientifically established (*26*), Japan's use of the pandemic as an excuse for not approving OCs runs counter to the World Health Organization's (WHO's) advice (*27*) not to change policies on OCs because of AIDS and to encourage the use of both condoms and effective contraceptives.

The attitudes of Japanese obstetrics and gynecology specialists toward approval of OCs seem to differ between the leaders of their professional organizations (pro) and private clinic owners (con). Although the latter earn a substantial portion of their income from performing abortions, their number (because of aging and a diminishing popularity) and hence their clout are diminishing. The decline in Japan of births and thus of the obstetrical market is unarguable, which suggests a more logical professional focus on gynecology, including preventive care. Prescribing OCs for suitable candidates, combined with pre- and post-prescription medical examinations, would constitute part of such a shift. This would also be consistent with the increased use of hormone replacement therapy among postmenopausal Japanese women—the most rapidly growing age group among Japanese women.

There is one final argument in favor of approving low-dose OCs. Because of the official ban, the negative side effects of the therapeutic high-dose Pills used for contraception are solely the responsibility of physicians who prescribe them for such purposes. Now that product liability legislation is about to become a Japanese reality, safer OCs accompanied by package inserts describing proper use as well as contraindications are urgently needed to prevent avoidable malpractice suits.

Second, introducing the concept of fertility awareness (*28*) makes particular sense in Japan, where women are guessing the timing of ovulation with the unreliable *Ogino* calendar rhythm method. Fertility awareness combined with an accurate method of determining the timing of ovulation, such as sophisticated at-home hormonal dipstick methods (*28*), would reduce unwanted pregnancies, especially for that portion of the Japanese population practicing intermittent and hence inconsistent use of condoms during a given month (*14*). Under the rubric of fertility awareness, sex educators could teach more positively about menstruation in a manner consistent with Japanese women's feelings regarding the "natural" rhythm of the body (*28*).

Finally, at first glance, Japan should be ready for the introduction of the abortifacient RU-486 in conjunction with an orally effective prostaglandin (*29*). The efficacy and safety of this method, combined with its emphasis on very early abortion, would clearly be an advantage in a country where abortion is practiced so widely (*12*) yet where the woman puts a high value on confidentiality. Even an opponent to legalization of OCs, Chizuko Ikegami, writes (*30*) that "it is ideal to correctly use condoms and to have an abortion pill, such as RU-486, as a fail-safe option." Economic objections by conventional abortion providers, coupled with innate medical conser-

vatism and a lack of public pressure, make it unlikely that this will happen soon.

One aspect of Japanese life, however, would make introduction of RU-486 extremely attractive. Many Japanese married couples experience relatively low coital frequency (*31*), making them ideal candidates for postcoital contraception of the "morning-after–pill" type. Such a pill would be a convenient alternative for women who wonder why they should be forced to annually ingest up to 280 OC tablets to prevent conception from coitus that they may have only a dozen times a year. A postcoital pill for couples who practice infrequent intercourse and thus are less prepared for contraception is bound to lead to a substantial reduction in abortions, especially among older women.

Although high dosages of conventional steroid OCs (if taken within 72 hours of coitus) are effective morning-after pills, it would probably be more desirable to have a specific drug available whose principal use would be solely such sporadic postcoital contraception and which would lack the estrogenic component of present-day morning-after pills. Recent studies (*32*) have identified RU-486 as a highly efficacious agent for such purposes, and it would make eminent sense to initiate clinical studies for its eventual approval by *Koseisho* for such a use in Japan.

Another form of postcoital contraception, not dependent on use within a 72-hour time frame, can also be visualized for RU-486 (and most likely for other steroid antiprogestins), provided a woman knows precisely the onset of her ovulation. Swahn and collaborators (*33*) in Sweden have shown that oral administration of a low dose of RU-486 2 days after ovulation (that is, on day 16 in a "normal" menstrual cycle) prevents implantation of a fertilized egg without disturbing the next menstrual period. In other words, if ovulation prediction, based on hormonal dipstick methods (*28*), became available in Japan, a woman would have to take at most thirteen pills a year to practice such postcoital contraception.

Japanese Population Policy: International Implications

So far, we have limited the discussion solely to the domestic Japanese birth control situation. However, there is an international component—until now almost totally ignored—that imposes an enormous element of urgency on the implementation of some of the recommendations listed above.

Japan is already a major actor in the field of development assistance; along with the United States, it is one of the world's two largest foreign aid donors. As it starts to play an increasingly prominent role in addressing the question of sustainable development (that is, population, poverty, and the environment) it would seem inevitable that the state of family planning practices within Japan, if left unchanged, will ultimately circumscribe the government's ability to take an effective world leadership position on population issues.

As recently as January 1994, the Japanese government announced its intention to contribute a total of $3 billion by the year 2000 to the most urgent problems facing developing nations, including population problems (*34*). Such shifts in priorities reflect both the growing diversity of Japan's foreign aid program and pressures from abroad to do more in these critical areas. But even if the Japanese government were prepared to become the second biggest foreign aid donor in the population field after the United States, the domestic situation in Japan, with its extraordinarily limited contraceptive repertoire, raises questions about the potential effectiveness of its international efforts in this crucial area.

Because expertise and experience in the donor nation are a basic foundation for transferring technical assistance and hardware to recipient countries in bilateral aid programs, it is imperative that as a donor Japan articulates policies on and services for family planning for its citizens, in order to justify the benefit of its international contributions. This has nothing to do with Japan's justified concern about its aging and eventually declining population—a problem felt to one degree or another by all Western donor nations. The demand in most developing countries is for OCs and for sustained-release formulations of such steroids (such as Norplant and Depo-Provera), for IUDs (notably medicated copper ones), and for condoms—all of them legal methods in other donor countries. The Japanese government intends to provide condoms and condom factories through its aid program announced in January 1994 (*34*), a commendable step that is clearly consistent with AIDS prevention. But one must not forget that it is equally important to provide effective contraceptives that are acceptable to and requested by the recipients in bilateral family planning programs, some of which use hardly any condoms and most of which do not solicit aid for abortion. How will Japanese family planning professionals, working in bilateral aid contexts without legal access to and experience with state-of-the-art birth control methods, counter the politically loaded question bound to be posed by local critics in the donor countries: How can you supply drugs and devices to us that are illegal in Japan?

Because of the restricted range of options of the Japanese Official Development Assistance in bilateral population programs, Japan currently uses multilateral population programs to funnel its aid for provision of contraceptives. But given its general propensity for bilateral aid (much of it tied to Japanese procurement), is it likely that Japan will continue to proceed along a multilateral path once it spends hundreds of millions of dollars for population aid? For practical reasons, to provide the recipients with what they want, as well as for political reasons, to promote Japan's status in the United Nations (UN), multilateral grants may be a viable alternative as a way to allocate the promised increased aid. The choice between funding in the form of bilateral or multilateral aid, however, does not solve a more fundamental issue that every donor country faces and that Japan cannot escape: the moral dilemma of promoting population control in developing countries by means that are illegal at home.

Unless Japan decides to provide aid funds primarily through multilateral UN channels, the simplest internationally acceptable solution is to legalize within Japan the use of truly modern methods (low-dose OCs, sustained release steroid formulations, and medicated IUDs). This is a very different problem from wondering how widely such methods will initially or eventually be used in Japan. Japanese consumers have every right to favor one method over another, but they should first have the option of an open personal choice.

REFERENCES AND NOTES

1. On 25 February 1992, the Subcommittee on Combination Drugs of the Central Pharmaceutical Affairs Council, an independent advisory board to *Koseisho*, informed the applicants of a freeze of decision due to "public health perspective reasons." *Yomiuri Shimbun*, 18 March 1992, p. 1; S. Weisman, *New York Times*, 19 and 22 March 1992, p. A3.
2. S. Matsumoto *et al.*, *Curr. Ther. Res.* **44**, 115 (1988); K. Satoh, *Int. J. Fertil.* **34** (suppl.), 8 (1989); T. Kobayashi, *ibid.*, p. 14; Y. Kuwabara, *ibid.*, p. 18.
3. Japan was the first country to deliver legal abortion primarily through its private sector, outside the otherwise all-encompassing Universal Health Insurance System. Currently, such privately performed abortions cost approximately $1000 in metropolitan areas, with the fee set at the individual physician's discretion. This offers obstetrics and gynecology specialists, licensed to perform abortions, a powerful economic motive to maintain the status quo. See S. Coleman, *Family Planning in Japanese Society: Traditional Birth Control in a Modern Urban Culture* (Princeton Univ. Press, Princeton, NJ, 1983); C. Djerassi, *Technol. Soc.* **9**, 157 (1987); E. Bumiller, *Washington Post*, 25 October 1990, pp. D1 and D6.
4. Japan approved synthetic orally effective progestins for therapeutic purposes (such as treatment of menstrual disorders) in the late 1950s: Norlutin (Syntex), containing 5 mg of norethindrone and 50 μg of mestranol, and Enovid (Searle), containing 9.85 mg of norethynodrel and 150 μg of mestranol. For history, see S. Matsumoto and E. Matsuyama, *Medikaru Fairu* (*Medical File*) **6** (no. 4), 2 (1991). Although 0.5 million contraceptive users of such high-dose Pills were cited in the 12 May 1993 appeal to Yuuya Niwa, Minister of Health and Welfare of Japan, by the presidents of the Japanese Academic Society of Obstetrics-Gynecology, the Japan Association for Maternal Welfare (*Nichibo*), Japan Family Planning

Association, and the Family Planning Federation of Japan, newspapers listed 0.7 to 0.8 million illegal users. [Y. Terashima, S. Sakamoto, S. Matsumoto, S. Kato, "*Tei-yoryo keiko-hinin-yaku no soki ninka ni kansuru yobosho*" (An appeal for early approval of low-dose OCs), *Asahi Shimbun*, 11 October 1985, p. 1].
5. Y. Moriyama, president, *Nichibo*, letter to I. Kobayashi, director of Pharmaceutical Affairs Bureau, *Koseisho*, 7 September 1985, published in *Nichi-Bo Iho*, 1 October 1985.
6. T. Kobayashi, *Medikaru Fairu* **7** (no. 3), 2 (1992).
7. Y. Shiokawa, press release from *Koseisho's* AIDS Surveillance Committee, 28 January 1992.
8. A Japanese "WHO/Partner Relation Survey" revealed that 13% of respondents in stable relationships had had outside affairs with an average of 2.4 people in the past year, with only 25% regularly using condoms, while 40% had never used one [T. Munakata and K. Tajima, Eds., *EIZU to sekkusu repooto/JAPAN: Kansen bakuhatsu no kizashi* (*Report on AIDS and Sex in Japan*) (Nippon Hyoron-sha, Tokyo, 1992)].
9. H. Minaguchi and T. Wagatsuma, *Nihon Ishikai Zasshi* (*Journal of Japan Medical Association*) **110**, 1273 (1993).
10. A "welcome baby" mass campaign has been supported since 1992 by government and business circles. For fiscal year 1994, *Koseisho* included a budget allocation for "Angel Plan Prelude" in preparation for next year's "Angel Plan," which will include other ministries and whose purpose is to improve social conditions to encourage women to bear and raise children.
11. This law was created to "prevent the increase of the inferior descendants from the eugenic point of view and to protect as well the life and health of the mother" (Article 1). Chapter 3 defines "Protection of the mother's life and health," with Article 14 listing exemptions from criminal charges at a physician's discretion.
12. Official eugenic protection statistics are believed to be gross underestimates of the actual numbers. M. Muramatsu [in *Abortion Research: International Experience*, H. P. David, Ed. (Lexington Books, Lexington, MA, 1974), pp. 133–136] estimated the actual incidence of abortion in Japan to be three times higher than officially reported, which in 1985 meant that Japan's abortion rate may have been twice that of the United States. This estimate is based on the known 1.59 million U.S. abortions versus the 0.55 million officially reported cases in Japan and takes into account the Muramatsu adjustment factor of three and the fact that the U.S. population is double that of Japan [S. Henshaw, *Fam. Plann. Perspect.* **22**, (2) 76 (1990)].
13. The Population Problems Research Council, *Kiroku Nippon no jinko: Shosan e no kiseki: Kazoku keikaku seron chosa, kaiteiban* (*Document Japanese population: The history towards low birth rate*), revised version (Mainichi Shimbun, Tokyo, 1992).
14. Although 60 to 80% of survey respondents practicing contraception say they use condoms, this number includes "alternate" users who use condoms only during the perceived fertile period. Coleman (*3*) discusses different manners of condom use.
15. The sharp dip in 1966 reflects Japanese superstition, according to which a man marrying a woman born in the "fire horse" year will have an early death. The fire horse year occurs every 60 years, thus causing these cyclic drops in births. The fire-horse birth decline of 1966 was also observed in Okinawa, which was then under American occupation, and abortion was thus illegal [M. Potts, P. Diggory, J. Peel, *Abortion* (Cambridge Univ. Press, Cambridge, 1977), pp. 136–137].
16. Prewar Japan was one of the first sites of IUD research, as shown by the development of the Ota ring by Dr. Tenrei Ota [R. J. Thomsen, *An Atlas of Intrauterine Contraception* (Hemisphere Publishing, Washington, DC, 1982), pp. 108–13]. However, the government had made contraceptive devices illegal under *Yugai Hinin-kigu Torishimari Kisoku* (Regulation of Harmful Contraceptive Devices, 1931), and the Ota ring was prohibited in 1936.
17. The regulations were introduced as an amendment to the Eugenic Protection Law by the addition of Article 15: "Practical guidance for contraception."
18. See, for example, Family Planning Federation of Japan, *Kanashimi o sabakemasuka* (*Can you punish the grief*) (Ningen no Kagaku-sha, Tokyo, 1983), pp. 266–268.
19. The American journalist Elizabeth Bumiller noted that "Japanese feminists sound as if they think repetitive abortions are less dangerous for women's health than the Pill." Lecture at the 6th International Symposium on Recent Advances in Fertility Control, 10 November 1991, Tokyo, transcribed in *Medikaru Fairu* **7** (no. 3), 13 (1992).
20. See, for example, *Piru—Watashitachi wa erabanai* (*The Pill—We do not choose it*) [*Onnano tameno kurinikku jumbi-kai* (Planning Group for Women's Clinics), Osaka, 1987]; Y. Jansson, *Yomiuri Shimbun*, 26 December 1986; *Asahi Shimbun*, 19 December 1986, p. 23; *ibid.*, 12 January 1987, p. 13; *MORE*, September 1991, pp. 376–379; S. Uno, *Women's Messages From Japan: A Women's Newsletter* **9**, 26 (1992); T. Yoshitake, quoted in *Mainichi Shimbun*, 18 July 1986, p. 23; *ibid.*, 5 October 1991, p. 19.
21. Their criticism of the Pill is similar to that existing among American feminist circles in the 1960s and 1970s [C. Djerassi, *The Pill, Pygmy Chimps, and Degas' Horse* (Basic Books, New York, 1993), chap. 9].
22. Y. Jansson and K. Murase, *Hum. Sex. (Tokyo)* **2** (no. 5), 10 (1991).
23. Y. Matsumura, *Mainichi Shimbun*, 7 October 1991, p. 19.
24. The process that began in 1986 is actually the second major application drive for approval of OCs. As early as 1965, *Koseisho's* advisory committee was about to approve OCs when the committee meeting was canceled the night before without explanation. Between 1965 and 1986, pharmaceutical companies were implicitly discouraged from applying for approval, which eliminated most journalistic or public interest in OCs.
25. The Japanese pattern of abortion is unique in the sense that most are done on married women in their thirties with children: "the larger the number of living children, the higher the rate of abortion experience" [M. Muramatsu in (*13*), p. 81]. The main reasons for strictly limiting family size and consequently having abortions are economic—especially the high cost of child education in Japan. In contrast, most Western countries have the highest abortion rates among younger women. Although teenage pregnancy in Japan has recently become a social issue, because teenagers are the only Japanese age group showing a consistent increase in the incidence of abortion {3.1 per 1000 in 1975 versus 6.6 per 1000 in 1990 [table 29, p. 340, in (*13*)]}, the ratio is still much lower than in other Western nations, notably the United States.
26. For example, *Popul. Rep. Ser. A* **7**, 20 (November 1988).
27. WHO, Special Programme on AIDS and Special Programme of Research, Development, and Research Training in Human Reproduction, Joint Statement, *Wkly. Epidemiol. Rec.* **62**, 244 (14 August 1987).
28. C. Djerassi, *Science* **248**, 1061 (1990); *Sci. Public Aff. (London)* **6** (no. 2), 5 (1991).
29. R. Peyron *et al.*, *N. Engl. J. Med.* **328**, 1509 (1993).
30. C. Ikegami, *Hum. Sex.* **5**, 28 (1991).
31. *Asahi Shimbun* (17 June 1993, p. 17) summarized the attention given to the media-coined Japanese "sexless" syndrome under the headline "*Sei-ai: Sei no nai KanKei*" (*Quiet love: Relationship without sex*).
32. A. Glasier, K. J. Thong, M. Dewar, M. Mackie. D. T. Baird, *N. Engl. J. Med.* **327**, 1041 (1992).
33. M. L. Swahn, M. Bygdeman, S. Cekan, S. Xing, B. Masironi, E. Johannisson, *Hum. Reprod.* **5**, 402 (1990).
34. According to *Nihon Keizai Shimbun* (7 January 1994, p. 7), the government intends to allocate substantial portions of the fund to *hiningu* (literally, contraceptive device, usually used as a euphemism for condoms) and to building *hiningu* factories in the recipient countries.
35. *Vital Statistics* and *Eugenic Protection Statistics*, published annually by *Koseisho*.
36. We thank our Japanese interviewees and J. Raphael (Stanford University) for their insightful comments and the Asia/Pacific Research Center of Stanford University for administrative and financial support.