A WORLD OF POPULATIONS

Transnational Perspectives on Demography in the Twentieth Century

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Introduction

Bombay gynecologist Pravin Mehta “peered through” the laparoscope, a “stainless-steel probe with a pistol grip and a light source.” He located and grasped a fallopian tube “in the instrument’s crab-like claw and, squeezing a trigger, snapped a plastic ring over the captured tube, making a tight ligature, rather in the manner of a stapler.” When the second tube was similarly ligated, Mehta invited Times correspondent Trevor Fishlock to “look through the laparoscope at his handiwork, at the tube tied neater than a sailor’s reef knot.” It was May 1981 and the tubes belonged to Manbhar, a thirty-year-old mother of two sons and one girl who had “walked six miles across the desert to have herself sterilized” at a makeshift clinic or “camp” set up in a school sixty miles south of Jaipur, Rajasthan. She had heard about a new operation performed by a “magic telescope” that was “so quick and efficient that she would be back in time to cook the evening meal and could be working next day in the fields.” Since the heyday of population control in the 1970s, millions of women like Manbhar have been sterilized by the scope, making tubal ligation (or tubectomy) the most prevalent form of contraception worldwide. In India and other countries, tubal ligation is often known simply as “the operation.”

Population control advocates viewed surgical sterilization as a “technological fix” that could be done to the poor and uneducated masses, with or without their consent. Tales of forced sterilization continue to hold “a kind of gory appeal,” and there are too many studies to cite here. We have histories of the second
Intrauterine device, or IUD, is the most popular contraceptive in the world today, which can be inserted into women’s bodies immediately after childbirth. Other technologies including contraceptive pills, vacuum aspirators, chemical spermicides and even failures such as “anti-fertility vaccines” and the “male pill” have all found their historians. But despite its significance, the technology of sterilization has not received much historical analysis. Laparoscopy is a special kind of endoscopy, or minimally invasive (keyhole) surgery, performed through a small incision in the abdomen. The scope separates the surgeon’s eye and hand, allowing the patient’s interior body to be explored and manipulated without the trauma of open abdominal surgery (laparotomy). Although more invasive and traumatic than vasectomy, the application of laparoscopy to gynecology made tubal ligation more acceptable to women by removing the need for general anesthesia and lengthy hospitalization. The major insider’s account attributes the take-off of laparoscopy in the 1960s to the sexual revolution and legal reforms in the United States, where it was affectionately dubbed “belly-button” or “Band-Aid” surgery. But this is the first study to examine the design and use of the scope in the context of global population control from the perspective of surgeons, their social networks and material practices.

This chapter is about how surgical sterilization became the world’s most widely used (and most controversial) contraceptive technology at the expense of other options, radically circumscribing women’s contraceptive choice. More generally, it is about what happens when tools and techniques are transferred from place to place and how studies of “things in use” can supplement our policy-centered histories of population control and our innovation-centered histories of technology. It analyzes the role of surgeons as “intermediary actors” in a network of governmental organizations, private companies, feminist activists, and the women or “lay end users” who were sterilized. Sizable financial investments played a major role in scaling-up and stabilizing the use of the scope, so I will also follow the money to investigate links between the technology and business of sterilization. But my main aim is to show how the materiality of surgical interventions into women’s bodies matters to our historical accounts of the policies and practices of contraception. Following technologies instead of projects, institutions and social movements can be a useful methodology for analyzing transnational processes, so I will follow the scope to India to examine the adoption and implementation of laparoscopy by a gendered family planning service that has consistently drawn criticism for its reckless and inhumane treatment of India’s poorest women.
Radically new surgical techniques of visualization and manipulation were introduced into gynecological practice in Europe by entrepreneurial surgeons and private companies in the 1950s and 1960s. Notably, medical instrument manufacturers Karl Storz and Richard Wolf made “cold light” fiber-optic systems available for testing to Hans Frangenheim, the leading West German laparoscopist. In Europe, scopes were used mainly as a diagnostic tool in gynecologic oncology and infertility treatment, but rarely for sterilization. Perhaps because of the legacy of eugenics, tubal ligation was a relatively uncommon procedure in Germany, accounting for only about 5 percent of laparoscopies in the 1970s. But in the early 1970s a small group of American gynecologists began to experiment with sterilization, some regarding it as “the only indication for laparoscopy.” Laparoscopic sterilization used electrically induced heat (diathermy) to cauterize the fallopian tubes. A major drawback of this method was the significant risk of internal injuries to the patient. For this reason, and also because they were protective of their time-honored skills, mainstream gynecologists widely perceived laparoscopy as the unnecessarily risky and unproved domain of a small group of enthusiastic dilettantes or “cowboys of the operating room.” Undeterred, laparoscopists resourcefully built a network for themselves by supplying the growing and lucrative market for technologies of population control.

“Population control” was the watchword of an environmental movement that had gathered considerable momentum by 1968, the year Stanford ecologist Paul Ehrlich predicted inevitable mass starvation in his sensational bestseller, The Population Bomb, and founded the organization, Zero Population Growth. Based at Johns Hopkins Hospital in Baltimore, Maryland, a world leader in medical innovation, gynecologist Clifford Wheeless was America’s leading champion of laparoscopic sterilization for domestic and international population control. In 1970 he estimated it would cost $30 million to sterilize every woman in Maryland who was over the age of thirty with at least three children. At $500 per operation (around $2,960 in 2012), he argued that state governments and private insurance companies could not afford to finance mass sterilization on the scale required for population control in the United States. As Wheeless put it in the Journal of Reproductive Medicine:

Recent trends in family planning and population control demand thorough evaluation of methods of surgical sterilization as to mortality, morbidity, effectiveness, simplicity and hospital cost. For local and state governments to support surgical sterilization in indigent populations, a method must be available that will allow large numbers of patients to be sterilized without the usual extended hospital stay and its associated cost.
Wheeless promoted laparoscopy as a money saver that would reduce the average cost per operation to less than $100 ($591) and hospitalization from one week to 24 hours. Crucially, he promised a technique that could be performed not only by a skilled surgeon such as himself, but also by the average nonspecialist in 30 minutes or less. Laparoscopy, he claimed, was easy to learn and could be taught to paramedics in “underdeveloped countries,” where the low operating time would permit “many sterilizations per day.”

The results of a pilot study involving twenty-five local women were encouraging, so Wheeless expanded his trial to include women from further afield. They were charged a “package price” of $125 ($739) for the entire procedure, including an overnight stay at a boarding house and a follow-up examination one month later. From 1968 to 1972 around 3,600 women were sterilized at Johns Hopkins. Most came from Maryland, but a few were referrals from other states where local hospitals required a husband’s signature, proof of marital status or committee approval. At Johns Hopkins, however, as long as the patient was a consenting adult (21 years or older), the only requirement was her desire to be sterilized. A younger woman could be sterilized only if she was assessed by the hospital review authority as “mentally retarded” or if she had already given birth to three or more children.

Feminist journalists frequently interviewed and quoted Wheeless on the liberating promise of laparoscopy, which received highly favorable coverage in newspapers and women’s magazines. The New York Times anticipated a “second contraceptive revolution” based on the dream of a perfectly reversible method, which would grant surgeons even greater control over human reproduction and make postoperative regret a thing of the past. On the other hand, the same paper acknowledged that some poor countries like India offered “assembly-line sterilization camps complete with door prizes,” a reference to cheap incentives including plastic radios. Despite the potential hazard of internal electrical injury, Wheeless recommended laparoscopy for immediate overseas use in population control programs, “without waiting for a better technique to be developed.”

Exporting the scope, however, was not a straightforward or unproblematic process. On the contrary, a concerted effort was needed to overcome major obstacles associated with redesigning a high-precision instrument for use in makeshift clinics. Laparoscopic equipment was expensive and difficult to transport. American Cytoscope Makers, Karl Stortz, and Richard Wolf manufactured a single unit for $3,000–5,000 ($12,800–21,300) and the equipment required to inflate the abdomen with gas for greater maneuverability was bulky. Wheeless solved these problems by scaling down the scope and by substituting its highly specialized components for cheaper generic ones. He used miniature valves from the aerospace industry to reduce the size of the standard Simm pneumoperitoneum machine (for gas), and by using an everyday $90 ($363) pediatric scope with an ordinary penlight, he brought the cost down by
a factor of ten to around $400 ($1,610). A bespoke “suitcase-size sterilization kit” manufactured in Pennsylvania by Medical Technologies International was first field tested in San José, Costa Rica, and then proposed for use in rural parts of the United States and in overcrowded city hospitals. Although Wheeless argued that inexpensive instruments would someday liberate physicians from dependence on “third-party institutions,” he would begin to work closely with the various organizations involved in population control, especially the United States Agency for International Development (USAID).

Building Networks: Training Surgeons, Distributing Scopes, and Scaling Up

The 1970s saw various national and international organizations, agencies, and institutions including the Ford Foundation, Population Council (financed by the Rockefeller Foundation), United Nations Fund for Population Activities (UNFPA) and the World Health Organization (WHO), financing research in contraceptive technologies and overseas family planning services, on which development aid to poor countries was increasingly being made contingent. Under the leadership of Reimert T. Ravenholt, the influential director of USAID’s Office of Population, the federal agency became by far the biggest spender on population control programs, with a budget that increased from $75 million in 1970 to $200 million in 1978 ($443 million to $704 million).

In the early 1970s Ravenholt agreed to support laparoscopy over competing alternatives primarily as a result of an excursion Wheeless made to Nepal in 1971.

His Majesty's Government of Nepal's Family Planning Project relied mainly on condoms, contraceptive pills and around 4,000 vasectomies every year, including in remote hilly areas where paramedical teams were flown by helicopter. Female sterilization was negligible when Wheeless first introduced laparoscopy to the Maternity Hospital of Kathmandu. Together, Wheeless and his protégé Kanti Giri, a Nepalese gynecologist who had previously trained at Johns Hopkins, sterilized over 200 women in one month. Next, Giri travelled on her own to “primitive settings” including the Pokhara Valley, where she performed dozens of operations in a single day. She claimed that the introduction of laparoscopy to Nepal marked a new era in family planning and recommended it for neighboring countries (China and India) with even more “acute” population problems. By 1977, she had personally sterilized over 1,500 women and was training future laparoscopists. Upon returning to the United States, Wheeless presented his experience in Nepal as a test run for more ambitious projects at a Virginia conference set up by Ravenholt to determine how to allocate the millions earmarked for population control.
So far the agency had spent a negligible portion of its budget in support of surgical sterilization. Vasectomy was practical, safe and already played a major role in population control programs in India, Pakistan, Taiwan, and South Korea. Women, on the other hand, were considered under-enrolled for the level needed for population control. Tubal ligation was an attractively one-off and provider-controlled alternative to pills and condoms, but current methods would have to be simplified and made practical before they could be implemented on a mass scale. Ravenholt, whose “myopic ethnocentrism” could be shocking, kicked off the Virginia conference with an overview of USAID’s position:

The primeval strength of the sexual drive and the associated hyper-fecundity of the world’s women are contributors to one of the world’s problems. Technology is a very important determinant on how rapidly we can move to curb the excessive population growth which occurs as a result.

It is not surprising that surgery, a “technology of control” that enables the surgeon to intervene into and manipulate the living structures of a (female) patient’s body, was highly compatible with Ravenholt’s gendered view of the global threat posed by Third World women’s uncontrollable sexuality. Many population control advocates endorsed a technological fix that promised to render cultural resistance and irrational (female) behavior irrelevant. Even so, laparoscopy was not the only technology of female sterilization showcased in Virginia and USAID was faced with a choice of competing alternatives.

Researchers at the Battelle Population Study Center in Seattle, Washington, were developing a different method based on blocking the junction of the fallopian tubes and uterus (tubal occlusion). A ballooning silicone rubber cap was being developed at the Western Pennsylvania Hospital, Pittsburgh, to provide reversible sterilization. Progress with outpatient culdoscopy (the vaginal route to visualizing and operating on the uterus), and non-surgical methods including quinacrine injections were also presented. Ravenholt did not share Wheeless’s confidence that laparoscopy was easy to learn, so it was not a foregone conclusion that USAID would back him. In Ravenholt’s words, it would take “500,000 Bob Wheelesses” or comparably talented surgeons to implement laparoscopy on the scale needed for population control. But Wheeless was, as Ravenholt put it, already “charging ahead” with laparoscopy. His positive experience in Nepal had given him an edge over competitors, making it easier for Ravenholt to decide in favor of a technique that had already been field-tested.

At first Wheeless received $50,000 ($283,000) from USAID to travel to El Salvador, Ecuador, India, Malaysia, Panama, and Thailand, where he trained physicians to use scopes paid for by the agency. Next, USAID joined forces with private companies to make simplified and more robust scopes for hard travelling. In 1972 USAID ordered a handful of prototype kits from American Cystoscope
Makers Inc., and from Medical Technology International for field testing at home and abroad. A 1973 conference in Geneva debated various proposals for technical modifications and in 1974, the agency agreed to purchase 150 scopes from the lowest bidder. By the end of the initial contract period, USAID had purchased 250 scopes for around $3,000 ($14,000) per kit.⁵⁷

The agency established the Program for International Education in Gynecology and Obstetrics (PIEGO), which extended Wheeless’s program at Johns Hopkins to include the University of Pittsburgh in Pittsburgh, Pennsylvania, Washington University in St. Louis, Missouri, and the American University in Beirut, Lebanon. Gynecologists visiting from overseas received four to six weeks of didactic and clinical instruction in contraceptive technologies, including laparoscopy. Before operating on a woman for the first time, a trainee could practice on “Gynny,” the pet name given to the popular plastic pelvic simulator made by Ortho, which resembled a woman’s body from the waist down with stumps for legs (figure 7.1).⁵⁸ Scopes were delivered and assembled by a trainer on a follow-up visit to the graduate’s home institution. By 1975 PIEGO had donated 175 scopes to 315 physicians in over fifty countries to the tune of $5 million ($21 million). Smaller organizations including the Association for Voluntary Sterilization and the Pathfinder Fund collectively distributed a further 100 scopes. By 1977 these numbers had increased to more than 1,400

physicians from sixty-eight countries. An estimated 500,000 sterilizations had been performed using 809 scopes. Beyond USAID and PIEGO, the American Association of Gynecological Laparoscopists (AAGL) dispatched teams of “flying doctors” to teach laparoscopy abroad, including in China soon after the government’s notorious one-child policy was introduced in 1978. Business was booming and an expanding and dynamic network of individual surgeons, academic institutes, private companies, and development organizations was scaling up and globalizing laparoscopy as never before.

Globalizing Laparoscopy: Overcoming Controversy with Clips, Rings, and Bands

In the case of surgical sterilization it was, paradoxically, the high level of skill required to safely handle the complex, high precision and expensive equipment that attracted a minority of ambitious surgeons to laparoscopy, at the expense of proven but less flashy alternatives such as laparotomy, culdoscopy, and vasectomy. Even under conditions perceived as ideal in the United States, paramedics were not generally expected to be able to master the technique. The footswitch could be accidentally activated in a moment of distraction, so a high degree of skill and concentration was required to safely operate the spark-gap equipment. In 1973 the AAGL’s Complications Committee found that the incidence of severe electrical burns was disturbingly on the rise. Eleven Johns Hopkins patients had sustained severe gastrointestinal injuries in 36,000 operations in four years. A puzzled Wheeless speculated that a bit of ileum (the terminal section of the small intestine) resting against the scope could be electrically burned if the operative instrument inadvertently made contact between the metal grasping forceps and the metal scope. In five instances, the surgeon had seen the forceps touch the intestine as the current was being passed through the fallopian tube and six women had endured laparotomy to repair the damage.

To minimize the risk of bowel injury, which seemed associated with operative speed, a proposed sterilization clinic in the United States would limit the maximum number of operations to ten per day. As Frangenheim put it, however, leading European laparoscopists worried that gynecologists in “underdeveloped” countries could end up standing “day and night” by their operating tables performing nothing but sterilizations. This was generally expected to have undesirable consequences. The leading British laparoscopist Patrick Steptoe warned his American colleagues that he “wouldn’t be happy about going into underdeveloped areas and showing them [local gynecologists] a few cases. They’ll have accidents.” So, the American project of exporting laparoscopy had some very prominent critics, especially in the UK and Western Europe. American
devotees of laparoscopy were undeterred, but even as they trained doctors and distributed scopes worldwide, they actively researched safer alternatives at home.

At Johns Hopkins, metal surgical clips normally used to ligate small blood vessels during delicate surgery were repurposed for sterilization. But six of the fifty-two volunteers who were sent home without additional contraception fell pregnant, cutting short a preliminary study of the mostly harmless but unreliable “hemoclips.” Wheeless’s colleague at Johns Hopkins, In Bae Yoon, had greater success with silicone plastic rings, which also raised (once again) the tantalizing prospect of controlled reversibility. By 1975 the Yoon band (or Falope ring) had been field tested in around 2,000 operations in the United States, Philippines, and South Korea with no reports of pregnancies or major complications. Yoon had taken out a U.S. patent and more than sixty physicians from Egypt, India, Iran, Mexico, and Thailand had received training in the new technique. The USAID-funded project to speed simplified methods of female sterilization from innovation to use was the “cornerstone” of gynecology at Johns Hopkins in the 1970s, but Wheeless and Yoon were not the be-all and end-all of laparoscopy in this decade.

A popular spring-loaded plastic clip with teeth to firmly grip and partly destroy the fallopian tube was developed by gynecologist Jaroslav Hulka at the University of North Carolina (UNC) at Chapel Hill (figure 7.2). Hulka’s research was financed by the Carolina Population Center, which by the mid 1970s had channeled $34 million ($145 million) from organizations including USAID and the Ford Foundation into various university departments. The center was perceived as strategically located for field testing new contraceptive technologies destined for the global South under realistically “backward” conditions in America’s impoverished rural South. A prototype applicator and clips were first tested in rhesus monkeys in Puerto Rico, quickly approved for clinical trial in human subjects and then tested on fifty women at North Carolina Memorial Hospital. Applicators were made and distributed to international research centers and in two years the clips had been used to sterilize over 1,000 women in ten cities including Los Angeles, Fort Worth, London, Bombay, Bangkok, and Singapore. Richard Wolf redesigned the applicator based on field experience and randomized trials were set up to compare clips versus cauterization. On the grounds that the evaluation of surgical equipment was not regulated by any U.S. legislation, that conducting a long-term study in a mobile society was impractical and that he had presented his results at a medical conference, Hulka declared his “experiment” over and began inserting clips routinely without asking his patients for special consent to participate in a clinical trial. The university relinquished the clips to Richard Wolf and they became the most important source of patent royalties to UNC in the 1980s.

As the “panorama” of accessories expanded beyond Yoon bands and Hulka clips, the techniques rapidly spread from America’s southern states to the global South (figure 7.3). By the mid 1970s USAID had spent $1.4 million on
The clip is applied to the tubes under direct vision, using the double puncture laparoscopic technique. The applicator retains the clip until the operator is satisfied it is correctly sited.

Clinical reports show that the Hulka-Clemens clip provides a safe method of female sterilization avoiding the dangers of tubal transection and diathermy. (1,2,3,4) The failure rate is approximately 2 per 1000 if the clip has been correctly applied to the Fallopian tube. (5) There is no increase in menstrual disturbances which can be attributable to sterilization with the clip. (6)

Preliminary studies suggest a potential for future reversal of sterilization due to the minimal tubal damage caused by the clip. (7)

Figure 7.2. A promotional flyer from the late 1970s for Rocket's gun-like clip applicator dramatically evokes female sterilization by the broken gender symbol for woman. Reprinted with kind permission from Rocket Medical PLC and the Jaroslav Hulka Papers, David M. Rubenstein Rare Book & Manuscript Library, Duke University.
sterilization research and $6 million on surgical equipment in comparison to $25 million on condoms and $62 million on oral contraceptives.\textsuperscript{78} In contrast to the costlier project of perpetually replenishing the supply of pills and condoms,\textsuperscript{79} the process of training surgeons and distributing scopes was intended to be self-perpetuating. Local authorities were expected to gradually assume responsibility for training and certifying second and third generation surgeons, disburdening the American taxpayer. This process was referred to as the “seeding” or “rebound” effect by Louis Keith, the first treasurer of the AAGL, who took pride as “a citizen and taxpayer” that federal money had spread laparoscopy around the world. It was “staggering to look at the sums invested” in scopes and kits, the core of projects “designed to multiply themselves at local expense.”\textsuperscript{80} With pills and condoms, there was simply no exit strategy for USAID, but sterilization could potentially continue if and when international family planning fell out of favor with taxpayers.

Commercial technologies intended for overseas countries were incrementally simplified and made more efficient in international clinical trials. A logical end point of this process was reached in 1977 with gun-like devices designed to apply clips, bands or rings. One such device, the Laprocator\textsuperscript{TM}, was made in Newtown, Pennsylvania by KLI Inc., a private company with two manufacturing plants and a school for training foreign nationals in the repair and maintenance of surgical equipment. In 1973 members of the first AAGL teaching excursion had lugged an eighty-pound suitcase around Beirut.\textsuperscript{81} A few years on, KLI’s kit weighed only ten pounds for easy transport, cost half as much as a standard scope, and dispensed with bottled gas and electrical current altogether (figure 7.4).

Commissioned by USAID to meet the increasing international demand for female sterilization, the Laprocator could be manufactured in industrial quantities rather than in small batches. Within a year, the U.S. Food and Drug Administration (FDA) had approved and registered the Laprocator for sale. KLI manufactured different kits for different socioeconomic segments of the “medical market.” The Tri-Control System (with optical, electrosurgical, and pneumatic components) was their “most sophisticated” product, but thanks to global demand, their low-cost Falope Ring System “was rapidly becoming the new standard for female sterilization.” Ravenholt expected that USAID would purchase thousands of Laprocators and would finally be able to supply every interested “medical school and teaching hospital in the developing world” with an affordable and easy-to-use sterilization kit.\textsuperscript{82} Although millions of middle-class American women chose to have their “tubes tied” in the 1970s, the extreme disparity between “contraceptive consumers” in the United States,\textsuperscript{83} and the “clients” of international programs was exacerbated by the ruthless implementation in the field of technologies and techniques designed to maximize efficiency.
Figure 7.3. A world map showing the distribution of the 509 scopes purchased and distributed by USAID by 1976. Reprinted from R.T. Ravenholt, Willard H. Boynton, Dorothy N. Glenn, J. Joseph Speidel, Gerold van der Vlugt, Andrew T. Wiley and Gerald F. Winfield, “Worldwide program
Rivaled only by China’s one-child policy in terms of scale and notoriety, India has one of the oldest and most ambitious family planning programs in the world. In the mid-1960s the Indian Ministry of Health launched a massive media campaign with a red triangle symbolizing family planning and set ambitious targets to insert Population Council-supplied IUDs into women. By 1972, however, women had revolted against the painful “Lippes loops” and Indian family planners were...
shifting their attention to men. Massive vasectomy “festivals” were put on with USAID support first in Kerala, where 80,000 were sterilized in two months, and then in other states to meet rising government targets.\textsuperscript{86} The Emergency period (June 1975–March 1977), when elections and civil liberties were controversially suspended in response to crop failures and economic crisis, resulted in more forceful drives. Most of the 8.26 million sterilizations performed in rural camps in 1976 were vasectomies of poor men. The notorious excesses of family planning during the Emergency were generally credited with Indira Gandhi’s electoral defeat in 1977,\textsuperscript{87} dramatized in post-Emergency critiques of family planning, and immortalized in world-famous historical fiction.\textsuperscript{88} Women became the primary target of mass sterilization drives only after the Emergency, when the reputation of vasectomy was ruined and it had come to be regarded as a form of castration.\textsuperscript{89}

Although it is more complicated, riskier, costlier, and has a longer recovery time than vasectomy, by the late 1980s, over 90 percent of surgical sterilizations in India were performed on women.\textsuperscript{90} In terms of sheer numbers, laparoscopy was a global success. But it was also “localized” by its encounters with new actors in different cultural settings.\textsuperscript{91} This final section returns to Pravin Mehta, the gynecologist from Calcutta who trained at Johns Hopkins and implemented laparoscopic sterilization on an unprecedented scale in India. Soon after he was recognized in the Guinness Book of Records 1999 for having sterilized nearly 400,000 women,\textsuperscript{92} Mehta bragged in the Times of India that he had taken the scope to “remote corners of the country” lacking electricity and running water. He had “streamlined things so much that patients [did] not even have to change their clothes during the procedure.”\textsuperscript{93}

Mehta first used the scope in a municipal hospital in the upscale Prabhadevi district of Bombay at the start of the Emergency period, when it seemed that compulsory sterilization for women with three or more children was on the cards.\textsuperscript{94} Compulsion was officially abandoned as a policy, but in 1979 the neighboring state of Gujarat endorsed “voluntary” laparoscopic sterilization to “revitalize” a flagging family planning program.\textsuperscript{95} As part of the program, Mehta sterilized over ten thousand women in one year using the Laprocator, which he raved about in the American journal, Obstetrics and Gynecology:

The general belief that the laparoscope, an expensive, sophisticated, fragile instrument, is unsuitable for mass sterilization programs is in error . . . laparoscopic sterilization with the Falope ring is much safer, speedier, and cheaper than other techniques, and can be used in the patient’s own rural setting.\textsuperscript{96}

Mehta developed a “no exposure” technique to encourage “orthodox rural Indian women” who resented undressing in his presence to “volunteer” for sterilization (figure 7.5). He also developed and started using a “single puncture” technique, which saved time but increased the risk of internal injury to women. It was
standard practice to sterilize the surgical equipment between operations but asepsis was “cumbersome,” so Mehta developed a quicker method of cleaning the scope in hot water and swabbing it with alcohol.97 His performance increased from just over 10,000 operations in 1979 to almost 60,000 in 1981.98 In 1989 he claimed in the British Journal of Obstetrics and Gynecology to have sterilized 250,136 women,99 a number that seemed implausibly high to John Guillebaud, the medical director of the Margaret Pyke Centre, a leading family planning clinic in London.

Guillebaud was particularly incredulous of Mehta’s “record” of 156 sterilizations in just under two hours. So to verify these extraordinary claims, he journeyed to a rural school near Calcutta to observe Mehta in action, videotaping him with elapsed time display to verify his speed. Astonishingly, Mehta spent less than one minute with each woman. Guillebaud also contacted a government secretary responsible for sterilization camps in West Bengal who independently confirmed Mehta’s track record and informed him that most medical associations and individual gynecologists in India disapproved of Mehta’s careless and high-speed methods.100 Guillebaud too was critical of Mehta for lack of counseling and humaneness. He suggested that female nurses should provide preliminary pelvic exams and water should be boiled and changed more frequently to reduce the risk of hepatitis B and HIV infection.101 He also argued that it would be “more humane” for the woman to be carried by stretcher to the recovery area, rather than “the present system of walking between two helpers.”102
Despite the urgency to defuse what Mehta echoed Paul Ehrlich in calling “the population time bomb in developing countries,” Guillebaud argued that he could have taken the time “to greet each woman by name and give her reassuring commentary, so that she is treated with gentleness and dignity.” Instead, women were numbered with stickers on their foreheads and arranged in two lines of even and odd in front of makeshift operating tables. In his hands, laparoscopy was a faster, cheaper, and riskier operation. Mehta crisscrossed India “on a war footing,” working tirelessly in the country’s poorest states including Rajasthan, Madhya Pradesh, Bihar and Orissa. His performance, recently described by one feminist film critic as “chilling and revolting,” was captured in Deepa Dhanraj’s classic feminist documentary *Something Like a War* (1991). Mehta, who bragged to the film crew about his national service even as he walked from woman to woman, “snipping tubes,” was clearly an extreme case, an exceptionally zealous maverick and a flashpoint for controversy and criticism. But since the 1980s feminist activists and social scientists have revealed that he was not alone in riding roughshod over women’s basic rights.

In 1982 the *Times of India* ran the upbeat headline, “With the scope there’s hope,” which described laparoscopic sterilization as “an outpatient procedure like visiting a dentist to have your teeth extracted.” In 1989, however, a headline in the same newspaper condemned the “High sterilisation death toll,” emphasizing the unquantifiable trauma caused by the death of an individual mother with a family to take care of. In the early 1990s the government responded to postoperative deaths caused by septicemia, peritonitis, tetanus and meningitis as well as to concerns regarding hepatitis and HIV transmission, by establishing regulations to cap the number of operations performed by a single team using two scopes at three per hour. However a scathing 2000 review by Johns Hopkins based researchers found that these regulations were rarely followed in practice. Recent fieldwork has shown that, in contradiction of official policy, women are still poorly informed about their choices, vasectomy is rarely proposed as an option, and a figure of authority such as a social worker, husband, or mother-in-law typically chooses sterilization on behalf of the woman who is to go under the knife. Despite long-term government efforts to promote alternatives, family planning in India has become stabilized as female sterilization, a woman’s burden.

**Discussion: Beyond Choice and Coercion?**

Some years before he would win the 1998 Nobel Prize in Economics, the Indian economist Amartya Sen weighed in on population control, eloquently arguing that pressuring poor women into sterilization camps with incentives and threats was, even by the standards of a country as poor as India, “a practice of remarkable barbarity and injustice.” Sen singled out “the unacceptability of coercion” and...
cited the “remarkable success in fertility reduction based on . . . women’s empower-
ment and agency” in the state of Kerala.\footnote{115} Yet a study published in the same
year revealed that a surgical team working under “appalling” conditions in Kerala
had performed forty-eight operations in just over two hours in clear violation of
official regulations.\footnote{116} Citing Sen, these findings were presented as particularly
worrisome insofar as Keralan women were perceived as being more empowered
than their counterparts in other states.\footnote{117}

As with many modern technologies, the story of laparoscopy is about progress
towards faster speed, smaller size, lighter weight, and lower cost. But along the
way, disturbing trade-offs have moved various commentators to condemn the
most efficient form of female sterilization as chilling, revolting, barbarous, and
unjust. Obviously, this story of technical change cannot be understood adequately
outside the politics of international development and population control in the
1970s, a decade when U.S. foreign policy and gynecological surgery became
strongly intertwined. In this period, purposes far beyond the immediate surgical
control of an individual woman’s body were materialized in scopes and clips.
These things were imbued with the pressure to meet quotas, the obsession with
efficiency, and the urgency to defuse India’s population bomb. Laparoscopy was
not merely symbolic or symptomatic of a particular social order. In the field, it
perpetuated and reinforced gender and class inequalities, lack of choice, and a
basic disregard for human dignity.

On a more general level, this chapter has examined where our choices to use a
particular technology are located. It has shown how decisions made in the United
States in the 1970s were modified and stabilized in India, where they still endure
today. For better or for worse, the ways we decide to use a new technology tend to
become “strongly fixed” in the material equipment, infrastructure and expertise
our societies have invested in, losing much of the flexibility that existed at the
outset.\footnote{118} In time, they may also acquire cultural legitimacy and even approval. In
rural Andhra Pradesh, for example, tubal ligation has become a valuable symbolic
resource exploited by young mothers to rapidly acquire the prestigious status of
“senior woman.”\footnote{119} Like legislative acts, policies, or regulations, technologies
also constitute social habits that can endure for generations. Laparoscopy in
India (and Puerto Rico) is a case in point. As such it deserves the same level of
analysis that scholars have accorded to the discourses, organizations and social
movements of population control. Gender and class inequalities are not only
embodied in discriminatory policies and projects, but also in tangible things like
stainless steel probes and spring-loaded plastic clips.

Since the 1980s, a central aim of feminist studies of technology has been
to cast women as agents and not merely as passive victims of technology.\footnote{120}
Of course, relatively affluent women have often enjoyed a certain degree of
autonomy and control over their own bodies as patients and consumers.\footnote{121}
KamaSutra condoms, for example, have been successfully marketed to Indian
“yuppies” since the early 1990s and many educated urban women ironically prefer “traditional” methods like withdrawal and rhythm. But when it comes to less well-off women, contraceptive choices are often severely constrained. Despite the alleged decline of the one-size-fits-all paradigm and rise of the “cafeteria” approach to contraception, poor, uneducated women remain India’s “most avid consumers” of sterilization. Manbhar may have chosen to walk miles across the desert to have her tubes tied, but did she have any other options?

I want to conclude this chapter by suggesting that we need to move beyond our obsession with agency, choice and coercion to start asking questions of a more tangible sort. We need to investigate how material technologies of population control worked (and often perpetuated inequalities) in practice, what the field conditions were like, and how bodily interventions, regardless of whether they were forced, voluntary, or something in between, were viscerally experienced by the women who encountered them in the most personal and intimate ways.

Acknowledgments

This chapter began as a term paper for Thomas Schlich, whose Canada Research Chair in History of Medicine at McGill University supported the fieldwork. Frank Suerich-Gulick was there at the start and I received generous feedback from participants at workshops in Basel, Berlin, Cambridge, Paris and Sherbrooke between 2009 and 2013. Rohan Deb Roy, Colin A.M. Duncan, Heinrich Hartmann, Sarah Hodges, Nick Hopwood, Ilana Löwy, Véronique Mottier, Dmitriy Myelnikov, Thomas Robertson, Thomas Schlich, Corinna Unger and Patrick Wagner are just some of those who commented on drafts. Research was supported by the Wellcome Trust (grant no. 088708), the Fonds québécois de la recherche sur la société et la culture (FQRSC), the Cambridge Commonwealth Trust, and Robinson College.

Notes

6. For example, on “la operación” in Puerto Rico, see L. Briggs, Reproducing Empire: Race, Sex, Science, and U.S. Imperialism in Puerto Rico (Berkeley, 2002), 145.
29. In 2012, the relative value of $30 million from 1970 ranges from $138 million to $453 million. A purchasing power calculator would multiply $30 million by the Consumer Price Index (CPI) to obtain $177 million. All conversions to 2012 dollars in this chapter are made using the CPI calculator at MeasuringWorth.com <http://www.measuringworth.com/index.php> (13 September 2013).
33. Ibid., 68.
36. Kluchin, Fit to be Tied, 71–72.


55. See C. Unger’s chapter in this volume.


63. Speidel, *The Role of Female Sterilization*, 105.

70. J.A. Rock, T.R.B. Johnson and J. Donald Woodruff, *Department of Gynecology and Obstetrics, the Johns Hopkins University School of Medicine, the Johns Hopkins Hospital: the First 100 Years* (Baltimore, 1991), 247.
74. Hulka et al., “Laparoscopic Sterilization.”
81. Soderstrom, “Report of ‘Flying Doctors Teaching Team.’”

85. C. Unger in this volume; Takeshita, The Global Biopolitics of the IUD, 66.


87. Tarlo, Unsettling Memories, 145.


89. Fishlock, Gandhi’s Children, 43.


96. Ibid., 349.


103. Mehta, Laparoscopic Sterilization, 345.

104. Guillebaud, Mass Laparoscopic Sterilizations, 1020.

107. Ibid.
115. Ibid., 21.
116. Ramanathan et al., “Quality of Care in Laparoscopic Sterilisation Camps,” 84.
117. Ibid., 92.
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