ONE

Introduction

Interpreting Infertility: A View from the Social Sciences

Frank van Balen and Marcia C. Inhorn

After decades of scholarly neglect, human reproduction, as a biological phenomenon that is socially constituted and culturally variable through space and time, has slowly gained the attention of social scientists from a variety of disciplines. Largely as a result of the feminist movement and the entrance of greater numbers of women into the academy, the past twenty-five years have witnessed a veritable explosion of research on the social construction and cultural elaboration of women's reproductive experiences (Greenhalgh, 1995a). From menarche to menopause, few aspects of the human reproductive life cycle, particularly as it pertains to women, have been left unexamined by social scientists working in a wide variety of cultural settings. This interest in reproduction is clearly evident in the numerous articles, monographs, and major recent anthologies devoted in part or in toto to subjects of fertility, family planning, childbirth, breastfeeding, menopause, abortion, and the various reproductive technologies, old and new, being applied to facilitate, curtail, or in some way shape human reproductive processes (e.g., Davis-Floyd & Dumit, 1998; Davis-Floyd & Sargent, 1997; Franklin & Ragone, 1998b; Ginsburg & Rapp, 1995a; Greenhalgh, 1995b; Handwerker, 1990; Lock & Kaufert, 1998; Morgan & Michaels, 1999; Stuart-Macadam & Dettwyler, 1995). Rapp and Ginsburg, in "Relocating Reproduction, Generating Culture" (1999), note the diverse and pioneering range of research on reproduction that has been generated during the past decade, typifying it as a "cresting wave" of scholarly and activist interest. In their paper, intended in part as an update of their earlier theoretical reviews of the politics of reproduction (Ginsburg & Rapp, 1991, 1995b), they identify a dozen "recent genealogies" of social science research on reproduction, particularly in the domain of anthropology, their central discipline. Among these genealogies, they highlight work under-

scoring the dilemmas of "disrupted reproduction" in which the standard linear narrative of conception, birth, and the progress of the next generation is interrupted by pregnancy loss, reproductive pathology, abortion, and childlessness.

REPRODUCTIVE DISRUPTION: A SCHOLARLY LACUNA

It is to the last domain of disrupted reproduction—infertility leading to involuntary childlessness—that this volume is dedicated. We argue that, despite the inspiring proliferation of recent studies on the relationship of reproduction to culture and politics, certain reproductive topics continue to be overprivileged at the expense of others. In particular, we now know much more about what might best be called normative human reproduction—particularly "high" fertility that is "controlled" through "modern" contraceptive technologies, as well as successful childbirth at the hands of physicians and midwives, resulting in maternal and child well-being—than we do about non-normative reproductive scenarios and experiences. Unfortunately, the taken-for-grantedness of reproduction can never be assumed. Rather, in many cases, reproduction goes badly and sadly awry (Inhorn, 1994a), marring individual lives and even wreaking havoc on entire populations. Moreover, the ways in which reproductive trajectories may be disrupted, generating suffering and even death, are manifold. Such reproductive disruptions include various sexually transmitted diseases (STDs), including AIDS, that negatively affect sexuality, fertility, and maternal and child health and survival; ectopic (tubal) pregnancy that if undiagnosed can lead to maternal death; pregnancy loss through miscarriage and stillbirth; premature births accompanied by neonatal morbidity and mortality; births of children with congenital health problems and disabilities; lactational difficulties leading to poor neonatal and maternal outcomes; maternal deaths from pre- and postpartum complications; chronic, debilitating complications of childbirth in multiparous (as well as "circumcised") women; unwanted pregnancies leading to safe and unsafe abortions; life-threatening reproductive diseases such as cervical and ovarian cancer; endocrinological disorders leading to menstrual problems and premature menopause; and infertility leading to involuntary childlessness.

This volume interprets infertility from multiple global sites and disciplinary perspectives. It is the first attempt to bring together the work of social scientists, including anthropologists, sociologists, psychologists, and behavioral health scientists in schools of nursing, medicine, and public health, who have focused their empirical research on infertility and new reproductive technologies (NRTs) over the past two decades. This small group of scholars—and a handful of others who, for various reasons, are not represented here—have been committed to rescuing infertility from the aforementioned list of neglected reproductive subjects, in part by proving its relationship to some of the most hotly contested political and bioethical (thus morally contentious) issues of our time. These include, but certainly are not limited to, debates over (1) the transformative possibilities for kinship and family relations inherent in new technology-enhanced forms of reproduction; (2) the disposition of various forms of biogenetic material, such as donor eggs and frozen embryos; (3) "entitlement" to children and who should foot the bill for high-tech infertility treatments among disadvantaged segments of the (global) population; (4) the power of the media to shape reproductive expectations and desires, particularly when reproductive "miracles" become the focus of media frenzy; and (5) the nature of stress in our lives and its potential somatic effects, including adverse reproductive outcomes. Given the utility of infertility as a lens through which so many other compelling issues may be brought into focus, the question becomes, Why the relative neglect of infertility as a legitimate subject of social science inquiry? We believe that there are a number of answers to this question.

First, in Western societies infertility resulting in involuntary childlessness is often cast as a medical condition rather than as a social problem worthy of social analysis. This "medicalization" of infertility has served to restrict the research agenda to the domains of medicine, epidemiology, and medical psychology, the latter devoted largely to the psychological aspects of medical interventions. With the persistent growth of new forms of high-tech reproductive medicine, infertility continues to be a hot area of medical research and is the primary focus of two major journals, *Fertility and Sterility* and *Human Reproduction*. Thus it is somewhat ironic that infertility has attracted comparatively little attention in the social sciences, although the medical monopolization of the subject makes this lacuna somewhat understandable.

Second, in most Western societies at least, infertility has long been a taboo subject, one that is not easily discussed with others, even in "neutral" research settings. Infertility uncomfortably connotes sexuality, as babies are made through sexual intercourse. Thus when couples remain childless, issues of sexual "failure" come to the fore; particularly for men, infertility raises the specter of impotency and other emasculating disruptions of male virility (Inhorn, 2002). Indeed, around the world infertility can—and often is—read as the physical instantiation through childlessness of sexuality, particularly male sexuality, gone awry (see chap. 6, this volume). Seen in this way, it may be a deeply painful subject to investigate.

Third, in Western societies the taboo against talking about infertility also relates to changing notions of parenthood, women's roles, and the importance of children in women's and men's lives. Since the feminist revolution of the 1960s and 1970s, motherhood has come into question as an essen-

tial, even fetishized component of women's lives (Ginsburg & Rapp, 1995b), and as a result many women (and their partners) have chosen to remain childless. Thus childlessness in the West at least can be chosen as a lifestyle option and, for some, as a feminist statement. In other words, it can be voluntary as opposed to involuntary, and, in either case, it is something perceived as deeply personal. Thus when a Western couple is without children, it is difficult for others to know whether this is voluntary or involuntary. And this blurring tends to obscure the visibility and importance of the latter. Therefore, if childlessness is a desired outcome for some, it may be deemed as not a problem for those who did not choose this state of affairs. Or at least the uncertainty about whether any given case is "voluntary" or "involuntary" makes it difficult to ask the right questions and show compassion. This ambiguity has perhaps troubled social science investigators, who fear raising a delicate subject in their research or who, as feminist scholars themselves, do not want to appear committed to the essentializing notion that motherhood, and quests to achieve it, should be a woman's sole purpose in life.

Fourth, during the past two decades but particularly during the 1980s, infertility has been raised in scholarly circles primarily in the form of critique of the so-called new reproductive technologies. Much of this Western critique, emerging primarily from the fields of bioethics, science and technology studies, cultural studies, and women's studies, has been more philosophical than empirical; thus much of it remains highly speculative, polemical, and even somewhat dismissive of an individual's legitimate reproductive desires and experiences. As a result, infertility as actually lived by women in the West has been relatively understudied; for example, of the scores of books emerging from the United States on infertility and NRTs in the past two decades, only four have been solidly based on empirical studies of infertile women and men undertaken by social scientists (Becker [1990, 2000], Greil [1991], and Sandelowski [1993], all of whom are represented in this volume). Furthermore, the burgeoning Western literature on this subject has focused almost exclusively on a handful of Western societies—primarily the United States, the United Kingdom, and Australia, which have been the major "producer" nations of reproductive technologies. Hence this literature is blatantly Euro-American, rarely acknowledging the reproductive desires and dilemmas of infertile women and men living outside the West.

Yet in many non-Western countries infertile people's suffering is often exacerbated by strong pronatalist social norms that do in fact mandate parenthood. The scholarly silence in the West on the plight of the infertile in non-Western places—including, in some cases, their desire for high-tech reproductive medicine—mirrors the monolithic, even neo-Malthusian discourse of Western population policy makers, who are often obsessed with

curbing the "hyperfertility" of non-Western subjects and who certainly do not see Third World women as worthy of high-priced, high-tech Western infertility interventions. In other words, helping infertile subpopulations in high-fertility non-Western settings—where infertile individuals may suffer more because of their "barrenness amid plenty"—has never been treated as a high priority in international population discourse and may even be viewed as contrary to the Western interest in global population control (Greenhalgh, 1995b; Lane, 1994).

Yet, as is apparent in this volume, focusing on infertility in "overpopulated" areas of the world reveals much about the "fertility-infertility dialectic" (Inhorn, 1994b, p. 23), or the relationship of tension and contrast that exists between fertility and infertility on both the microsociological level of individual human experience and the macrosociological level of reproductive politics. Many of the chapters in this book examine the inextricable relationship between fertility and infertility, asking how infertility is viewed—top down and then bottom up—in nation-states where fertility regulation is part of national political discourse and policy making. The very existence of infertility in high-fertility regimes represents a challenge to monolithic assumptions about the nature of population control and the extent to which fertility-control orthodoxies are in fact resisted and reconfigured in practice, particularly in non-Western populations among whom infertility is demographically significant and greatly feared.

GLOBAL CONTRASTS

In short, this volume is dedicated to countering the predominant Western view of infertility as a yuppie complaint of little concern to the rest of the purportedly overpopulated developing world. As we demonstrate, infertility is a global phenomenon, with some portion of every human population—estimated at 10 percent on average—affected by the inability to conceive at some point during their reproductive lives (Reproductive Health Outlook, 1999). This volume is dedicated to situating infertility in *global* perspective, which allows for two very general conclusions to be reached. First, infertility is, for most human beings everywhere, a distressing experience, leading to decreased levels of personal well-being. Second, women's well-being appears to be more seriously affected than men's in most parts of the world.[1]

Indeed, women worldwide appear to bear the major burden of infertility, in terms of blame for the reproductive failing; personal anxiety, frustration, grief, and fear; marital duress, dissolution, and abandonment; social stigma and community ostracism; and, in some cases, life-threatening medical interventions. Furthermore, in general these social and psychological consequences of infertility appear to be greater for women in the so-called

developing societies of the non-Western world than for women in the West (Inhorn, 1994a; Kielmann, 1998; Sundby, 1997)—although, to be sure, the effects of infertility may vary greatly from one society to the next and among individuals in the same society, who may differ by virtue of gender, race, class, religion, age, sexual orientation, rural-urban location, and so on (Mohanty, Russo, & Torres, 1991). While never losing sight of these axes of "difference," several chapters in this volume certainly make clear that women in so-called developing societies may be blamed, sometimes unjustly, for reproductive failure and may become true social outcasts if they are unable to find a solution for their childlessness. Infertility thus profoundly affects women's moral identities and the local moral worlds in which infertile women live (Kleinman, 1992, 1995), given that suspicion, blame, guilt, and accusation are among the common by-products of the experience of continuing childlessness.

Certainly, in Western societies involuntary childlessness may also have important social consequences, especially for women. One's expectations and sense of personal identity are overturned; the prospect of a life without children (and, in turn, grandchildren) may lead to depression and marital turmoil; and the quest for high-tech medical interventions may lead to financial ruin, bodily harm, and, ultimately, lack of reproductive success. However, as implied in the very word *involuntary,* a childless life in the West tends to be much more accepted, and the social, psychological, and economic repercussions of involuntary childlessness are generally distinctively less severe. As pointed out by "voluntarily" childless adults, not having children may in fact have social, psychological, and economic advantages in many Western societies.

Thus to fully understand the consequences of infertility, the notion of child desire—the perceived importance of having children—must be interrogated in a variety of global settings. As more of this kind of research becomes available, salient global differences will become increasingly clear. In most Western societies, having children or not having them is generally perceived as a matter of choice. Other life goals, such as pursuing a fulfilling professional career, are often given equal weight. Thus in many Western countries motivations for having children often lie in the realm of personal happiness and involve notions of the unique parent-child relationship and the possibility of giving and receiving love and affection. In Western research settings, motivations involving continuity and old-age security are much less frequently mentioned (van Balen & Trimbos-Kemper, 1995).

On the contrary, in other global locations social and economic reasons for having children are often prominent. Frequently cited reasons for having children generally fall into three categories (Inhorn, 1996; see also Browner & Sargent, 1996): (1) social security desires, or the conviction that children are necessary in a number of ways to secure parents' and families' survival, often through their labor contributions and later their support of aging parents (in the absence of pensions, health insurance, nursing homes, and other forms of support for the elderly); (2) social power desires, or the belief that children serve as a valuable power resource, particularly for women confronted with patriarchal social relations within marriage and the family; and (3) social perpetuity desires, or the perceived need to continue group structures, particularly kin-based extended family systems, as well as ancestral "memories" into the future. Increasingly as well, having children may be seen as an important political investment or statement, as various ethnic, nationalist, and religious-fundamentalist movements use children to promote their causes and engage in demographic wars of relative survival vis-à-vis other groups in the political landscape (Inhorn, 1996; chap. 15, this volume).

The existence in many non-Western settings of such powerful social, economic, and even political rationales for having children does not mean that personal happiness and the joy of having children are not also important motivating factors. Indeed, the notion that children might be less loved, valued, and treated with affection in developing societies is not only ethnocentric but also belies much evidence to the contrary.[2] Loving, committed, highly affectionate parenting styles can be found throughout the world and are often abundantly evident in non-Western settings.

Given the multifaceted nature of child desire in many non-Western societies, not having children is seldom viewed as a choice or a lifestyle option. Children are often desired soon after a couple becomes sexually active (usually through marriage but increasingly through nonmarital consensual unions). And the failure to produce a child—especially a son in some societies—is readily recognized by the couple themselves, as well as by all those around them, as a major problem with numerous implications. As noted by anthropologists, including some in this volume, childlessness in most non-Western societies may not be "politely hidden," as it is in the West, and is often the source of much painful and direct discussion and gossip (see chap. 11, this volume; see also Inhorn, 1994b, 1996).

This is not to deny that painful social scrutiny of infertile couples also occurs in the West. They may meet with their share of insensitivity and incomprehension, for example, in comments such as "There are already so many children in the world," or "You have to be glad that you have so much spare time," or "You can't have everything," or "You can always adopt." These kinds of responses may be especially difficult to accept when they are expressed by couples with children.

Furthermore, widely held and highly valued beliefs in individualism, free choice, and control over one's own life may cause frustration for infertile Western couples that is not felt by those in societies where these values are

less emphasized. Contraceptives preclude unwanted pregnancies, and in the case of a contraceptive failure, abortions are available (although less so in some countries such as the United States). Many couples plan the date of birth of their first child precisely, as well as the spacing of the next one(s). Moreover, Western biomedicine can increasingly control for the "quality" of the growing fetus through a variety of prenatal diagnostic tests and procedures (Browner & Press, 1995; Rapp, 1999; Rothman, 1986). In the case of a "positive" result (i.e., evidence of fetal "defect"), a "therapeutic" abortion is offered as an option. As a result of this highly medicalized climate of reproductive control, involuntary childlessness may be as hard to accept, but for different reasons, for couples in the West as it is for those in non-Western countries where reproductive control is never assumed.

MEDICINE AND MEANING

Thus another global contrast revolves around the role of medicine in infertile people's lives. Western-generated medical interventions to help achieve reproductive control—including high-tech infertility treatments—are simply unavailable or inaccessible for the vast majority of individuals living in developing countries. Even low-tech interventions are often out of reach for large segments of the population; if they are available, they may be delivered to patients under abysmal conditions, leading to iatrogenic consequences in some cases (see chap. 13, this volume; see also Inhorn, 1994b). Indeed, in many societies around the world, attempts to discover the etiology of and cure for infertility never involve "modern" Western medicine—let alone new reproductive technologies—and rely instead on ancient medical traditions and healing practices. In some societies with literate traditions, such ethnogynecological beliefs and practices can be documented to have existed for thousands of years (Inhorn, 1994b). Today the continuing presence of various ethnogynecologies—even in the midst of increasing Western technomedical hegemony—attests to the viability of traditional forms of healing and the continuing role that such alternative forms of medicine play in the contemporary world. Even in the West, biogynecology (i.e., Western, biologically based gynecology) is not entirely hegemonic; among infertile couples in some Western research settings, more than 10 percent report having used alternative medicine—including New Age healers, magical stones and crystals, religious amulets, and pilgrimages to places of worship—to overcome their childlessness (van Balen, Verdurmen, & Ketting, 1995).

Thus it is important to recognize the ways in which help seeking for infertility does not always involve resorting to the latest Western technologies. In fact, on a global level NRTs and even "lesser" forms of Western-based medical treatment for infertility are still rare, and the majority of

infertile "patients" seek help in the ethnogynecological realm. Although high-tech reproductive medicine is being rapidly exported around the globe, it is often available only to elite segments of the population in developing countries (Inhorn, 2001). The class-based medical exclusion of large segments of the infertile population only serves to create increasing frustration and resentment among those less fortunate individuals who desire but are prevented from accessing new technologies. Inevitably, this frustration and resentment is bound to increase as more sophisticated forms of therapy become available in Third World sites and are heralded as "miracle solutions" to childlessness by global multimedia forces (see chap. 17, this volume).

In contrast, in those Western countries with socialized health care systems, NRTs are used by the majority of infertile couples. However, politicians continue to debate whether such treatments should be considered a basic health "right" and should be subsidized by governments or health insurers. In countries such as the United States that have dominant "free-market" systems of medical care, coverage of infertility treatments is neither a government priority nor a priority of most health insurers; thus, as in the non-Western world, high-tech therapies remain out of reach for disadvantaged American populations, including poor women of color, who, as a subpopulation, may suffer from higher rates of infertility than affluent white populations, who are able to gain access to infertility treatments (Nsiah-Jefferson & Hall, 1989).

Furthermore, contemporary political debates in a number of northwestern European countries are questioning the very meaning of the terms "infertility" and "involuntary childlessness" and their implications for national health care systems. Although these twin terms are often used interchangeably, they may in fact have very different connotations. Whereas infertility may be defined as the *process* of not being able to have children, involuntary childlessness may be viewed as the final *state or condition* resulting from infertility. In Western countries infertility is often thought of as a medical condition involving defective bodily parts and processes (see chap. 5, this volume), whereas involuntary childlessness refers to the social and psychological consequences of not having children. Although such distinctions may seem nothing more than semantic hair-splitting, the differing uses of these terms are of growing political concern in contemporary Europe, where current discussions center on whether not having a child is a medical problem (i.e., infertility) or an unfulfilled personal desire (i.e., involuntary childlessness). If it is the former, then infertile couples may be recognized as having a health problem and, consequently, their treatment for infertility is accepted as a necessity. Most important, the *costs* of such treatment must be paid or reimbursed by the national health care system. However, if not having a child constitutes a *social* problem of involuntary

childlessness, as growing numbers of European politicians, ethicists, and even social scientists have argued, then the absence of children is a personal issue for which society bears no responsibility. From this perspective, children may just be one of the things in life that an individual may want but cannot necessarily have—like a steady partner, a house, a car, or a full-time job. In other words, childlessness is a matter of fate that one must accept, and it is not something that a society's health care system can be expected to remedy.

As this debate is being played out in European political circles, gynecologists, patient groups, and counselors are lobbying to accentuate infertility as a medical condition, to create positive societal attitudes toward reimbursement under national health care systems (see chap. 4, this volume). Although choosing this strategy may help to secure the future of insurance coverage for infertile individuals, it may also serve to diminish understanding of the essential pain of infertility, which is located less in the body (the site of medical interventions) and more in the psychosocial consequences.

The importance of language and meaning in debates over infertility can be seen further in the close examination of the Western medical definition of "infertility." In Western medical discourse, "infertility" is usually defined as the inability to achieve pregnancy after a year (or two) of trying to conceive a child through regular sexual intercourse. A distinction is also usually made between "primary" infertility, when such infertility occurs in the absence of a previous history of pregnancy, versus "secondary" infertility, when the infertility occurs after a pregnancy. Indeed, even a woman who has had only one short pregnancy (as determined by a chemical pregnancy test) that ended in an early spontaneous abortion is, by medical definition, considered to be secondarily infertile. Although such standard definitions may have utility in Western clinical settings, they can be shown to be an arbitrary cultural construction with limited utility for the rest of the world. In other regions, the Western medical definition of infertility may diverge considerably from individuals' subjective definitions, which are often based on socially relevant indigenous categories and systems of identity formation. Yet, because standard Western definitions of infertility have been adopted and disseminated globally—for instance, by the World Health Organization (WHO) in the infertility diagnostic criteria it publishes for worldwide consumption (1987b, 1989, 1993)—they underestimate the true extent of suffering that women (and men) endure as a result of their fertility problems, even when they already have living children.

Several chapters in this volume (see esp. chap. 10) show how purportedly universal definitions of infertility have little relevance for individuals actually *experiencing* infertility at various sites around the globe. For example, infertility may be experienced subjectively when pregnancy is not

achieved within the first month or two of marriage—with a full year of infertility being perceived as grounds for marital dissolution. Or in some societies bearing no sons may be the social equivalent of having no children at all, making the parents infertile under the terms of a classic patriarchal social system (see chaps. 7 and 16, this volume). Or having only one or a few children may constitute a form of social infertility when community standards dictate that a "normal" woman bear seven, eight, or even more children (see chaps. 11 and 15, this volume). In other words, subjective meanings and experiences of infertility are culturally variable, pointing to the pitfalls of applying a standard Western, culturally constructed definition to the rest of the world; yet this is what is routinely done in demographic surveys and in Western-based clinical settings.

THE CRITIQUE OF NEW REPRODUCTIVE TECHNOLOGIES

"Standards" of infertility care in the West are constantly changing, given that "new" new reproductive technologies or new applications of existing technologies are being introduced continually. Yet it is crucial to recognize that "standard" infertility care does not automatically result in success. Rather, even in the best clinics in the West, the success rate of in vitro fertilization (IVF)—or what is often termed "the take-home-baby rate"—is never more than 40 percent and usually averages about 20 to 25 percent per cycle (Sciarra, 1994). Thus as many as 80 percent of infertile couples do not achieve viable pregnancies through NRTs—casting doubt on whether following a Western "standard of care" is a worthy goal in other regions (Okonofua, 1996; Sheth & Malpani, 1997).

Today in the West the most commonly used NRTs are (1) the oldest and least invasive method of intrauterine insemination, using either husband's or donor sperm that is ejaculated into a container, subjected to laboratory preparation procedures, and then inserted through the vagina into a woman's uterus; (2) IVF and several variants,[3] in which both sperm and ova are retrieved from individuals' bodies (either a husband and wife or egg and sperm donors), placed together in petri dishes under laboratory conditions (not in true test tubes, as the term "test-tube baby" implies) to be fertilized, and then transferred in the early embryonic stage (i.e., so-called embryo transfer) to the woman's uterus, with the hope that implantation and pregnancy will occur; and (3) most recently, intracytoplasmic sperm injection (ICSI), a variant of IVF involving micromanipulation techniques, whereby one spermatozoon is injected directly into an oocyte under laboratory conditions, in the hope of improving fertilization outcomes, particularly in cases of serious male-factor infertility. Indeed, in the most "extreme" cases of male infertility, in which no sperm are present in the ejaculate, microsurgical epididymal sperm aspiration (MESA) and testicular

sperm extraction (TESE) provide means of invasively removing sperm from the testicles for the purposes of the ICSI procedure.

Together, these NRTs—also known as "advanced reproductive technologies" for the purposes of "medically assisted conception"—have clearly achieved an important status in the treatment of infertility in the Western world, where they have helped many couples, including several of the authors in this volume, to achieve pregnancy and become parents. However, NRTs have *not* proven to be a true panacea for the treatment of infertility, even in the major scientific producer nations. Given the relatively low success rates of all these technologies, their promise of a "take-home baby" can become a cruel chimera. For this and a number of other reasons, they have come under heavy criticism—even outright attack—from Western bioethicists, science and technology studies scholars, and feminist theorists and activists.

For one thing, because of the basic biological facts of life, women are the ones who must "embody" the new reproductive technologies, in the form of potent hormonal drugs, continuous monitoring of ovarian follicles and blood levels, invasive egg retrievals and embryo transfers, and, in some cases, surrogate pregnancies. This bodily surveillance and invasion has led women (usually not men) to assume significant levels of medical risk, leading feminist scholars and activists to ask if we really need all this technology. Furthermore, it has been argued that physicians actively participate in women's medical risk taking by encouraging their repetitive and often extreme use of the latest technologies—what Sandelowski (1991, 1993) has called the "never-enough quality" of NRTs—rather than by developing low-tech solutions, giving "nature" more time, advocating adoption or fostering, suggesting that treatments be stopped altogether and childlessness accepted, or searching for ways to *prevent* infertility.

The excesses of women's medical risk taking seem particularly pronounced in cases in which an otherwise fertile wife is being treated for her husband's infertility. The very nature of reproductive biology makes treatment for infertility in men themselves very difficult. Well-controlled studies have shown that male-directed treatments, such as varicocele surgery (i.e., surgery of the blood vessels in the scrotum) and low-tech treatments, such as hormonal therapy, biochemical therapy, and intrauterine insemination using a husband's sperm, have relatively low success rates (Devroey, Vandervorst, Nagy, & Van Steirteghem, 1998; Gerris, 1997; Kamischke & Nieschlag, 1998). Only since the advent of ICSI and its attendant techniques, MESA and TESE, has the treatment of male infertility become more successful. With ICSI, a "subfertile" man and his wife can have offspring that are genetically related to both parents. However, ICSI is a high-tech version of IVF, in which the "treatment" is basically carried out on the woman's body. Thus feminist critics in particular have pointed to this basic inequality—of women being treated for male infertility by means of a risky, expensive, and not highly successful therapy—as a potent example of male bias in the practices of modern Western biomedicine.

Indeed, early radical feminist critiques—such as those in the works of Corea (1985; Corea et al., 1987), Klein (1989), Ratcliff (1989), and Stanworth (1987)—tended to describe NRTs as a conspiracy of male "technopatriarchs" and the pharmaceutical industry against women, aimed at taking control of the female body and especially the childbearing process. Although more recent feminist critiques have been less condemnatory and more nuanced (see chap. 3, this volume), they have continued to point out the myriad problematic features and consequences of NRTs. Among these are the potentially lethal prescription of high doses of hormonal and chemical agents to stimulate "superovulation"; the manipulation of women's hormones so as to regulate cycles of IVF and ICSI according to physicians' office hours; the reluctance of the medical community to discuss and study possible negative, late-onset side effects of these therapies; the tendency of clinics to raise success rates by selecting only "promising" (especially younger) patients and manipulating the data presented to them; the presentation of incomplete and biased information to prospective patients; and the persuasion of poor childless women to donate oocytes in order to receive treatment themselves (which they would not otherwise be able to afford).

In addition, early feminist critics associated the new reproductive technologies with the glorification of traditional motherhood. Thus women who chose to use these technologies so as to fulfill a motherhood wish were often depicted as having "false consciousness" or being "cultural dupes" (see chap. 2, this volume). In feminist thought of the 1980s, motherhood was often criticized for its barriers to personal development and freedom, certainly not worthy of a high-stakes medical quest. Yet this feminist discourse proved oppressive in its own right: feminist or otherwise "emancipated" women who were experiencing infertility problems found it difficult to reveal their child desire and were forced to hide their infertility-treatment seeking from others. Some feminist scholars who were undergoing high-tech infertility treatments found themselves in the hypocritical position of denouncing the new reproductive technologies in lectures and at conferences.

Furthermore, most critiques tend to focus either explicitly or implicitly on the Western, white, socioeconomically elite, heterosexual couples who are able to afford high-tech reproductive medicine and who thus, to use Sandelowski and de Lacey's terms (chap. 2, this volume), provide the material and data for "commercial and academic exchange." In such discussions, the massive global spread of NRTs to individuals in the developing world (as well as the use of NRTs among single and lesbian women, partic-

ularly in the West) is rarely mentioned—an unexamined scholarly erasure that seems related prejudicially to what Ginsburg and Rapp (1995, p. 3) have called (following Colen, 1986) "stratified reproduction," a term indexing the power relations by which some categories of people are empowered to reproduce and nurture while others are devalued and even despised.

However, given the widespread prevalence of and suffering associated with infertility around the globe, particularly in pronatalist settings, it should come as no surprise that NRTs are being marketed to and readily consumed by those in the non-Western world who are able to afford them. In addition to the examples from Egypt, Israel, China, and India in this volume, limited reports and studies indicate that these technologies have spread to other parts of Asia (Sheth & Malpani, 1997), to Africa (Okonofua, 1996), and to Latin America (Nicholson & Nicholson, 1994). As is shown in this volume, such technologies do not enter cultural vacuums but rather are shaped by local considerations, be they cultural, social, economic, or political.

In particular, many of the moral quandaries surrounding the use of these technologies in the West take new forms in other cultural settings with varying religious traditions. An excellent example of this is afforded by the earliest "new" reproductive technology, artificial insemination with donated semen (AID), also known as donor insemination (DI) (see chap. 6, this volume). When carried out by a trained physician, this physically less invasive technology has about the same success rate as IVF and ICSI. Therefore, some feminist scholars have suggested it as a more acceptable strategy for the treatment of male infertility (Kirejczyk, 1996; van der Ploeg, 1995). What is missing in this essentially Western view of things are the cultural constraints against using donated semen among some groups, especially in the Muslim world (Inhorn, 1994b; chap. 14, this volume). Furthermore, donated semen must be assessed for the presence of HIV. This involves deep-freeze storage of semen for the period of HIV incubation (at least three months), thawing, and testing for HIV before the semen can be used. In other words, the spread of AIDS has changed the essentially low-tech method of DI into a relatively high-tech treatment. The need for such quality controls in the midst of other possible cultural constraints does not make DI a viable option for large parts of the developing world.

Ironically, it is AIDS and the increasing incidence of other sterilizing STDs that have finally brought infertility to the attention of international health policy makers. Not only are sexually transmitted infections a major risk factor for infertility, particularly in women (Cates, Farley, & Rowe, 1985; Reproductive Health Outlook, 1999), but women who are infertile and desire a pregnancy are much less likely to use safe sex, thereby exposing themselves to the risk of HIV infection. Indeed, in some parts of Africa infertile women have been shown to be two and a half times more likely than pregnant women to be HIV-positive (Favot et al., 1997).

At the 1994 International Conference on Population and Development in Cairo, in which various nongovernmental organizations and Third World feminist groups were prominent, the international population establishment was heavily criticized for its top-down approach to population and family planning that neglected many other urgent population issues, such as sterilizing and life-threatening STDs, including AIDS. Thus the Programme of Action adopted at that conference signaled a clear shift toward the notion of reproductive health, broadly defined (Lane, 1994; United Nations, 1995). And for the first time neglected populations of "nonfertile" women—in the broad sense of menopausal women, girls, and the infertile—were included on the agenda. The new agenda is therefore intended to be based on the interests of populations themselves, including populations among whom subfertility and infertility are perceived as serious threats.

In other words, infertility at last has been officially acknowledged in international population and development circles as an important global phenomenon in its own right, forecasting greater research and political interest in this once-forgotten issue, especially in developing countries. The fruits of official recognition are already becoming apparent. For example, at the end of 1999 an international conference on infertility and the social sciences, organized by two Dutch contributors to this volume, Frank van Balen and Trudie Gerrits, was held at the University of Amsterdam. The conference brought together approximately thirty researchers, most of them social scientists, to discuss the results of their studies on infertility from nearly every continent on the globe. At least half of the participants were from the non-Western world, and several were conducting large-scale studies of infertility funded directly by international health and population organizations (e.g., the Ford Foundation). The sense of promise and momentum created by the conference was palpable, and plans were discussed to hold an international meeting on infertility and the social sciences every two years, in sites both Western and non-Western.

Thus the voices of the millions of infertile women and men around the globe may finally be heard, as the results of these and other studies are published. Indeed, we hope that the chapters in this volume, the first of its kind to examine infertility in global perspective, will contribute to this new international research agenda and, ultimately, to public health policies and programs that will eventually alleviate the suffering of infertility wherever it occurs.

THE AIMS AND ORGANIZATION OF THIS VOLUME

Allying ourselves with a growing number of social scientists who hope to place reproduction at the center of social and political-economic analysis (Franklin & Ragone, 1998a; Ginsburg & Rapp, 1995b; Greenhalgh, 1995b; Strathern, 1993), we are dedicated in this volume to interpreting infertility from a variety of positions and positionalities. Our dedication to multiple positioning means that we have drawn purposely from a wide range of disciplinary perspectives, theoretical frameworks, methodological approaches, discursive styles, and international locations, in terms of authors' institutional affiliations and their research venues. As a result of this multiplicity of scholarly interests, authors in this volume have adopted varying positions—for example, on the best uses of biomedicine and high-tech interventions for infertility, particularly in non-Western sites—that may seem less than uniform, even contradictory. Yet in our view this range of approaches and perspectives, coupled with the provocatively critical tone of many chapters, contributes to the heterodox richness of this globally inclusive volume.

Similarly, the authors in this volume bring a multiplicity of personal perspectives to their work. Most, but not all, are women, reflecting ongoing gender asymmetries in the study of human reproduction. Not surprisingly, many of the authors, including the editors, bring a keen sense of personal engagement to their studies, given their own life stories of non-normative reproduction, involving infertility, pregnancy loss, medically "assisted" conception, adoption, and childlessness. (See the contributor list at the back of this volume for details.) Thus, the professional *is* the personal for many of us involved in infertility research, as with research on reproduction in general (Rapp & Ginsburg, 1999). The studies, we argue, are richer because of this: not only do they bring us as researchers closer to our subjects through a kind of empathic interconnection, but they are also driven by a collective commitment to giving voice to the infertile, in an attempt to promote greater public understanding and compassion.

Furthermore, as suggested by this volume's title, *Infertility Around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies,* we have a number of explicit aims. First, as suggested earlier, there is a need to destabilize standard, Western-based definitions of infertility, as well as the relationship of infertility to childlessness of an involuntary nature. Many of the chapters in this volume interrogate these concepts, thereby exposing the cross-cultural variability of the meanings associated with the inability to conceive and to produce desired children.

Second, this volume clearly exposes the deeply gendered nature of reproduction generally and infertility specifically. While we recognize the centrality of both women and men as reproductive actors, the chapters in this volume reveal the ways in which infertility, the world over, remains largely a *woman's* problem—despite Western medical rhetoric about the necessity of treating the infertile *couple.* Indeed, with few exceptions, even in the West, it is women who bear the burden of blame and social scrutiny for infertility, no matter how "infertility" is socially defined; who embody both popular notions of causation and actual medical diagnosis and treatment; and who live the untoward repercussions and social backlash associated with this affliction. Given this reality, the female experience of infertility is clearly foregrounded in this volume, although male infertility is also explored in a number of chapters (chaps. 6, 9, 12, 14, 15). Nonetheless, we acknowledge with dismay the relative lack of male "voices" in this volume—not only of the authors, three out of seventeen who are male, but also of male informants, who "speak" only in chapter 6 on donor insemination. Indeed, male infertility per se, as well as male experiences of partners' infertility, represents the great uncharted territory in the social science of infertility. Clearly, exploring this terrain is a most pressing research need for the twenty-first century, given that more than half of all cases of infertility globally involve so-called male factors (Reproductive Health Outlook, 1999). Exploring male infertility cross-culturally will require overcoming the stigma that currently prevents male researchers from initiating research on infertility—which, according to one male infertility researcher, is perceived as a "girly subject" (Bharadwaj, pers. com.).

Third, the explicit focus of this volume is on the global dimensions of infertility. This has meant moving beyond typical Western sites of research, debate, and technology production, to expose not only the cross-cultural prevalence of infertility but also global connections between societies that "produce" and "consume" reproductive technologies, both those that curtail fertility and those that enhance it. A major goal of this volume is to expose global interconnections, particularly with regard to reproductive technology transfer, on two levels. First, some societies are under international pressure to reduce population through the acceptance of family planning regimes and Western-generated reproductive technologies to regulate fertility. Yet even in societies that have accepted the inevitability of population reduction through fertility control, infertility is never considered a viable option, and infertile couples are under pressure to produce at least one child, sometimes with the assistance of new reproductive technologies, as in the case of China (see chap. 16, this volume). Thus, the second theme of global interconnectedness revolves around the cultural contextualization of new reproductive technologies, particularly as they reach societies where health care resources are limited and other indigenous systems of knowledge and healing are available. A number of chapters in this volume adopt a critical stance on the wholesale exportation of Western-generated reproductive technologies into new cultural sites, asking

what happens when globalizing technologies are received in various non-Western localities far from their original source. In other words, this volume attempts to shift the discussion of new reproductive technologies away from typical Western solipsism to a multisited, critical ethnography of globalization and its impacts—one in which First and Third World consumers of technology are viewed not as we/they but rather as participants in the same historical trajectory (Greenhalgh, 1995a).

Part I. Discourses and Debates

The chapters in this volume are grouped into four sections, reflecting some of the issues raised above and a number of others as well. Part I is devoted to discourses and debates in the scholarly, activist, and popular literature on infertility and new reproductive technologies. The chapters in this section critically examine some of the implicit and explicit assumptions underlying the master tropes and metanarratives in the infertility literature, particularly since 1978, when Louise Brown, the world's first test-tube baby was born. In fact, Margarete Sandelowski and Sheryl de Lacey argue in chapter 2 that "in-fertility" was "invented" in 1978 with Baby Louise's birth, because in 1978 infertility became "a product of technology" in which virtually any obstacle to procreation could, at least purportedly, be circumvented. A "by-product" of this invention, according to these authors, is a profusion of (mis)representations of the infertile themselves in Western professional and popular discourses. Inspired by Foucauldian approaches to discourse analysis (Foucault, 1972), Sandelowski and de Lacey lay bare six of the most common tropes about infertile persons and the extent to which these different Western representations do or do not provide "experience-near" accounts of infertile persons' gendered subjectivities.

The gendered dimensions of infertility are also the explicit focus of chapter 3, in which Charis M. Thompson critically reviews feminist theorizing on infertility and NRTs during two phases: circa 1984–1991, when radical feminist critiques of NRTs prevailed, and circa 1992–1999, when feminist discourses on infertility shifted toward more nuanced representations of the technologies and those who use them. Thompson argues that infertility in the age of new reproductive technologies has, in fact, been performed as the "perfect feminist text," in which many of the rhetorical, personal, and political issues, conflicts, and debates within Western feminism have been played out. Both chapters 2 and 3 speak to the need for an ongoing commitment to deep empiricism and critical ethnography—particularly on the use of new reproductive technologies as cultural practices (Franklin & Ragone, 1998a)—to ground some of the more speculative discussions surrounding reproductive futures and dystopias in the age of NRTs.

The final chapter of this part, chapter 4, by Frank van Balen, shifts our attention to Western psychological discourses and especially the enduring "psychologization" of infertility over the past fifty years. Van Balen argues that Western psychiatric and psychological literature has attributed the underlying etiology of infertility to psychological disturbances, particularly of women in childless partnerships. He traces the shifting history of four models of psychological influence, describing the historical junctures at which particular models came to fruition and then waned. But he concludes that despite the discovery of biologically based, somatic causes for most cases of infertility, psychological thinking endures—leading to a "blame the victim" mentality that patients' rights groups are currently attempting to overcome. Thus van Balen asks us to consider what happens to the psyche of persons who are infertile and challenges us to interrogate age-old questions about the relationship of mind and body, psyche and soma.

Part II. Gender and Body Politics

The relationship between mind and body is also a theme of part II, which explores the embodied experience of infertility in the lives of individual women and men around the world. The emphasis in this part, however, shifts from scholarly discourse to individual experience: infertility and infertile bodies are explored in the most experience-near terms, by focusing primarily on infertile women's and men's own accounts, illness narratives, and life stories. The five chapters in this section, from disparate regions of the globe, speak to the magnitude of social suffering that infertile women (and to a lesser extent men) must endure, particularly as they strive to make sense of why their reproductive bodies have failed them. But they are also surprisingly hopeful in suggesting that the infertile are strategic actors, whose lives, marital relationships, and gender identities are not always permanently disrupted by the inability to produce desired children. Thus these chapters help to deconstruct the discourse of "desperateness" so common to both popular and professional accounts of infertility in women's lives around the globe (Franklin, 1990). The chapters also make abundantly clear that the gender and marital politics surrounding infertility and its treatment involve both conflict and accommodation. Most important, several of the chapters show that infertile marriages, instead of being destined for dissolution, may be surprisingly successful and enduring, even through the emotional turmoil of infertility treatment (see also Inhorn, 1996).

In chapter 5, Arthur L. Greil examines the ways in which the "social drama" of infertility is played out in the bodies of American women. He argues that in the discourse of Western medicine infertile women's bodies are often viewed metaphorically in "mechanical" terms—primarily as flawed machines in need of medical intervention. Although women inter-

nalize these metaphors, leading at times to self-blame, they are also not entirely passive in the face of medicalization and metaphorization. Instead, they are problem solvers, who actively and strategically "work the system" to push medical treatment in the direction they want it to go.

Chapter 6, by Gay Becker, examines how a similar social drama is played out in the lives of American couples who have chosen to use the "oldest" new reproductive technology, donor insemination, to overcome male infertility. Becker shows us that even though DI has been in place as a treatment option in the United States for several decades, couples who choose it still confront weighty decisions about whether or not to disclose this form of assisted conception to their children. She argues that no matter what stance they take, many parents lack clear confidence in their decisions and fear for the future well-being of their DI children. The discomfort and moral uncertainty faced by couples in this position reflect the ongoing social stigmatization of male infertility in American society—with all of its implications for masculinity and paternity—as well as the ongoing privileging of "biological" procreation and kinship connection in American society, where social parenthood is seen as being somehow less "real."

The next two chapters in part 2 explore Asian women's roles in society and expectations regarding marriage and motherhood. In chapter 7, Melissa J. Pashigian examines northern Vietnamese population discourse, which valorizes the "happy family" of two children and the "heroic" role of women as both mothers and workers. In this cultural setting, women feel motherhood is mandatory, not only to achieve adult gender identity, but also to establish bonds of emotional "sentiment" with a husband and, by extension, his patrilineal family. Thus this chapter examines desires for children within marriage and family life, placing the discourse of family within larger Vietnamese political discourses, which are simultaneously antinatalist and pronatalist.

By way of contrast, in chapter 8 Catherine Kohler Riessman argues for the nonmandatory nature of motherhood in the "progressive" South Indian state of Kerala. She provides a fine-grained sociolinguistic analysis of infertility narratives told by three South Indian women—narratives that throw into question whether women's lives, even in pronatalist societies such as India, are permanently and tragically marred by involuntary childlessness. Reissman suggests that by focusing on older, gainfully employed infertile women past reproductive age, we may gain new insights into the ways in which women fashion meaningful lives, gender identities, and marriages, even in the absence of motherhood.

Such "optimism" is also found in chapter 9, by Gwynne L. Jenkins, in conjunction with an infertile Costa Rican couple, Silvia Vargas Obando and José Badilla Navas, who were Jenkins's hosts and informants in the field. This poignant account of a couple's attempts to make meaning of and come to terms with long-term infertility in a socially intolerant cultural setting is a true testament to the human spirit, to the strength of marital love and commitment, and to the power of religious faith. The chapter explores the plight of the infertile in relation to the plight of unmarried teenaged mothers in Costa Rica, focusing on the "illegitimate" babies that are sometimes passed between them. And the chapter is also self-consciously reflexive, interweaving the experiences of the author, a young American woman anthropologist, with those of her hosts, who had kept their suffering over infertility hidden from her for many years. Their interwoven story, once finally told, is both heartrending and triumphant.

Part III. The Infertility Belt

Unlike part II, which highlights women's and men's experiences in disparate global locations, part III focuses on Central Africa, where reproductive morbidities and mortalities are related to each other in various complex ways. Specifically, the African continent is considered to have an infection-related "infertility belt" wrapped around its now AIDS-ridden center (Collet et al., 1988; Ericksen & Brunette, 1996; Larsen, 1994). With pockets of infertility reaching rates of 30 percent in some Central and southern African populations, infertility and AIDS represent twin threats for depopulation in this purportedly overpopulated region of the world (Feldman-Savelsberg, 1999).

But what is it like to be an infertile African woman living in the world's infertility belt? What are the social consequences of infertility, in terms of a woman's quotidian existence, her gender identity, her conjugal relations, her family support, her community acceptance, her future security? How are men implicated when conception fails to occur? And do men and women suffer, psychically, somatically, and socially, in the same ways? Is such suffering ameliorated by various forms of healing or social assistance? Are effective treatment options, including new reproductive technologies, available for the infertile? And do such forms of infertility treatment receive institutional support in countries committed, at least rhetorically, to population reduction? Indeed, can infertility be considered part of national and international efforts to promote family planning and women's reproductive health? Or is it a "luxury disease," a waste of valuable health resources, given that the inability to have children is not (apparently at least) life-threatening and may be perceived as mitigating population pressures?

These are questions that are taken up in the four chapters of this part, which explore Central and southern African infertility from a variety of disciplinary and local perspectives. In chapter 10, Lori Leonard takes us to Chad, where she contrasts local Sara women's accounts of their fertility "problems" with Western "scientific" accounts, both epidemiological and

demographic in nature. She argues that despite the demonstrated existence of an infertility belt stretching across Central Africa and including Chad, standard demographic studies of infertility in Africa regularly miss many instances of indigenously defined problematic fertility in the lives of African women. This is because standard Western definitions of infertility, as well as demographic approaches to enumerating cases, are cultural constructions that may not be applicable in non-Western settings, where women's self-defined "fertility problems" are of much greater scope than standard definitions of infertility would suggest.

Similarly, in chapter 11, Pamela Feldman-Savelsberg challenges us to consider local emic, or indigenous, public health perspectives on infertility in the Grassfields of Cameroon. She examines the long-standing colonial and postcolonial interest in controlling fertility in this region, an area with uncontrolled "hyperfertility," according to international population policy makers. However, among the Grassfields Bamiléké, women view their fertility as deeply threatened and as tied to the troubled political positions of their chiefs, whose waning powers in a new era of Cameroonian nation-statehood symbolically index the infertility of both Bamiléké fields and women's wombs. Thus Feldman-Savelsberg argues that on a local level at least it is *infertility,* not hyperfertility, that is of paramount concern and the "unrecognized public health problem" for Grassfielders themselves. Thus chapters 10 and 11 demonstrate that in the politics of reproduction even numbers are "political artifacts" (Greenhalgh, 1995a, p. 26) and may be used variously and strategically on the international, national, and local levels.

In chapter 12 Trudie Gerrits takes us from the political to the ethnomedical as she explores the perceived causes of infertility in a matrilineal society in Mozambique. Gerrits argues that most of the studies of infertility on the African continent come from patrilineal societies, where women are typically blamed for infertility and expected to overcome it through a variety of ethnomedical treatment strategies. Therefore, the case of the Mozambican Macua, who are matrilineal, appears quite exceptional: not only are men typically diagnosed and deemed responsible for infertility problems in the Macua ethnomedical system, but women in infertile marriages are encouraged to "heal" their childlessness by procreating with other men, leading in some cases to female-initiated divorce. Gerrits concludes that although childless women are still stigmatized in some ways in Macua society (mainly through their exclusion from important fertility-related rituals), it is quite clear that matrilineality also protects them by preventing many of the profound social repercussions experienced by childless women in other patrilineal African societies.

The final chapter of part III explores the relationship between ethnomedicine and biomedicine in sub-Saharan Africa, concluding with this cautionary and somewhat sobering note: as we enter the twenty-first century, it is highly unlikely that Western-based infertility treatment and new reproductive technologies will supplant indigenous ethnogynecologies (Inhorn, 1994b) around the world, in part because of the poor distribution and poor quality of gynecological care in biomedical settings around the world. Indeed, the recourse to ethnogynecological medicine among infertile individuals the world over indexes in part the inability of Western-based biomedicine to "cure" all cases of infertility, even with the latest advances in reproductive medicine. As shown in chapter 13, by Johanne Sundby, in the developing world resources and competent medical personnel are often scarce, and the great gulf between physicians and infertile patients (in terms of their social status, education, and belief systems) makes patient compliance with poorly explained and usually lengthy diagnostic workups and treatment protocols unlikely. In such developing-country settings, it is not surprising that infertile patients seek help in the realm of ethnomedicine, where rich indigenous traditions may exist to support infertile individuals, both medically and psychosocially (Inhorn, 1994b). Sundby examines this interplay between ethnomedicine and biomedicine in both The Gambia and Zimbabwe, describing the undeveloped state of biomedicine in these countries and suggesting what it would take to bring infertility diagnostic and treatment facilities up to WHO standards. Thus Sundby brings into critical focus issues of global inequality and contemporary international health debates about whether comprehensive "reproductive health" services can ever really be achieved. In particular, she questions whether Third World governments, plagued by limited health resources, can be expected to broaden the scope of their reproductive health efforts to include infertility and the various technologies required to diagnose and overcome it, particularly in the midst of such other pressing crises as maternal mortality and AIDS.

Part IV. Globalizing Technologies

Despite the sobering conclusion to part III, part IV demonstrates that Western-based reproductive medicine, including new reproductive technologies, *is* spreading to the developing countries of the non-Western world. Even in impoverished countries in Africa, Asia, and Latin America, NRTs are being introduced and used by elite members of society. Thus, despite the distributive injustice accompanying the globalization of NRTs, it is important to recognize that they are being rapidly exported and consumed around the world, with far-reaching implications for societies on the receiving end of global technological transfer. The chapters in this final sec-

tion explore the globalization of NRTs in four non-Western societies, Egypt, Israel, China, and India, asking how these technologies are both accommodated and resisted in disparate settings.

In chapter 14 Marcia C. Inhorn explores the relationship of the global to the local, asking how NRTs, as purportedly universal, "culture-free," inherently beneficial medical technologies, are received locally in the "overpopulated," pronatalist Muslim nation of Egypt. Focusing on issues of embodiment, Inhorn shows how local cultural notions of reproductive bodies and physiology, as well as concerns about safety, efficacy, and the physical and emotional well-being of IVF children, deter many infertile Egyptians from pursuing NRT treatments and worry those who do use them. Furthermore, she demonstrates the profoundly gendered implications of the "newest" new reproductive technology—ICSI—when applied in the Egyptian context. In a Muslim society where all forms of egg, sperm, and embryo donation, as well as surrogacy, are strictly prohibited, the introduction of ICSI has led some infertile men to cast off their reproductively elderly wives in the hope of achieving biological parenthood with younger, more fecund women.

In chapter 15, based in neighboring Israel, Susan Martha Kahn provides a contrasting study of NRT use among Israel's ultraorthodox Jewish population. Although religion is equally if not more important in dictating the permissible uses of NRTs in this population, Kahn shows how the rulings of various ultraorthodox rabbis have led to very different conclusions about appropriate NRT use among ultraorthodox Israelis. Ironically perhaps, rabbinic interpretations of the permissibility of both sperm and ova donation are much more liberal than interpretations in Egypt, although restrictions still apply based on the perceived conferral of "Jewishness" through the recombination of procreative materials. Furthermore, unlike Egypt, where access to NRTs is restricted to the monied elite, they are widely available and significantly subsidized under the Israeli health care system; thus infertile ultraorthodox women, who are under pressure to produce numerous children, have essentially no choice but to undergo multiple trials of NRTs in the hope of achieving multiple births.

In contrast to the two pronatalist Middle Eastern societies described in chapters 14 and 15, Lisa Handwerker takes us in chapter 16 to the People's Republic of China, a nation with the largest population in the world and the most stringent one-child-only population policy. There, Handwerker examines the paradoxical growth of a major "high-tech baby-making industry." The new reproductive technologies have taken hold in China, she argues, because the one-child-only policy is indigenously interpreted as "you must have one child policy." That one child, furthermore, must be a "perfect" child to improve the fitness of the Chinese population as a whole. Thus Handwerker examines the use of NRTs as a method of "new eugenics," given widespread Chinese beliefs that IVF children are mentally and physically superior to children conceived without technological assistance. She concludes with a discussion of the potential bioethical implications of using new reproductive technologies for eugenic ends, particularly in societies with a culturally entrenched preference for sons and a resultant crisis of "missing females."

Finally, chapter 17 takes us to another "overpopulated" South Asian nation, India, where NRTs have also become available to urban elites. In this concluding chapter, Aditya Bharadwaj is less concerned with the uses of NRTs among advantaged Indians than with the fascinating controversy that is unfolding in India over "test-tube firsts." Bharadwaj describes the contemporary debate over which Indian doctor is truly responsible for introducing IVF to India and whether this is the same doctor who purportedly produced the second-ever test-tube baby in the world. Expanding on Latour and Woolgar's (1986) concepts of credit and credibility, Bharadwaj makes the case that in the age of NRTs multimedia forces are extremely important in ascribing "credit," as reward, to the scientists involved in the production of new scientific knowledge and, in this case, the production of human life itself. In other words, in India the media have played a major role in advancing the careers of particular IVF doctors and not others, which has led, among other things, to at least one suicide, an ongoing clash of medical egos, and a contemporary controversy over scientific "credibility" that Bharadwaj carefully lays out.

As with the other chapters in this section, the Indian case amply demonstrates how the availability of new reproductive technologies in disparate global sites may create new possibilities, new social imaginaries, and new arenas of cultural production, as well as new contradictions, new dilemmas of agency, and new regimes of control (Ginsburg & Rapp, 1995b). Yet an important point to bear in mind here is that despite all of the controversies described in the preceding chapters, NRTs are responsible for creating thousands of new lives around the world. Indeed, not all infertile persons remain infertile forever and at least some individuals move beyond the psychic suffering of infertility and childlessness to become parents, including of "test-tube" babies in places like India, China, and Egypt. But parenthood often brings with it new questions and quandaries, including concerns about the "fitness" of parents who have experienced the long-term trials and tribulations of infertility and IVF treatments, as well as the physical and social well-being of children conceived through such "extraordinary" means. Thus the optimistic conclusion of this volume—that childlessness can be overcome through perseverance and technological assistance—is also tempered by the reality that many societies, including those in the West, have yet to come to terms with infertility, new reproductive technologies, and the various strategies through which the infertile

become parents, both inside and outside heterosexual unions. Globally, stigma endures and is a powerful force in the lives of the infertile and the children they love as their own.

Together, these chapters reveal much about the "lived experience" of infertility and childlessness the world over. Both collectively and individually, the infertile face a "medical and emotional road of trials" (Sandelowski, Harris, & Black, 1992, p. 282), one whose end is often not clearly in sight. Yet the chapters in this volume shed much light on the journeys of the infertile down that road—whether in Central Africa, western Europe, Latin America, South Asia, the Middle East, or Middle America. The local realities of infertility—with all the attendant suffering and hope for technological salvation—speak to the importance of infertility as a global phenomenon, one that deserves our attention and concern in the new millennium.

NOTES

1. For Western-based research on this subject, see Abbey et al. (1991); Greil (1997); Stanton et al. (1991); van Balen & Trimbos-Kemper (1993).
2. On a historical note, well-known pedagogical historians, such as Aries (1962) and Shorter (1977), argued that in preindustrial Europe parents were not affectionate to their children. The idea of loving and dutiful parents was supposedly a recent historical development. By implication, this was thought to be true as well in developing countries, where children are desired for their social and economic benefits. However, these ideas are being overturned by more recent scholarship.
3. Such variants include gamete intrafallopian transfer, zygote intrafallopian transfer, tubal embryo transfer, and, most recently, intracytoplasmic sperm injection using micromanipulation techniques. Additional spin-offs of the IVF procedure include cryopreservation of unused embryos, the use of donor eggs, and combining donor sperm and/or eggs in various types of surrogate gestational relationships (Turiel, 1998).

REFERENCES

Abbey, A., Andrews, F. M., & Halman, L. J. (1991). Gender's role in response to infertility. *Psychology of Women Quarterly, 15,* 295–316.
Ariès, Ph. (1962). *Centuries of childhood: A social history of family life.* New York: Knopf.
Becker, G. (1990). *Healing the infertile family: Strengthening your relationship in the search for parenthood.* Berkeley: University of California Press.
Becker, G. (2000). *The elusive embryo: How women and men approach new reproductive technologies.* Berkeley: University of California Press.
Browner, C. H., & Press, N. A. (1995). The normalization of prenatal diagnostic screening. In F. D. Ginsburg & R. Rapp (Eds.), *Conceiving the new world order: The global politics of reproduction* (pp. 207–322). Berkeley: University of California Press.
Browner, C. H., & Sargent, C. F. (1996). Anthropology and studies of human reproduction. In C. F. Sargent & T. M. Johnson (Eds.), *Medical anthropology: Contemporary theory and method* (pp. 219–234). Westport, CT: Praeger.
Cates, W., Farley, T. M. M., & Rowe, P. J. (1985). Worldwide patterns of infertility: Is Africa different? *The Lancet, September 14,* 596–598.
Colen, S. (1986). "With respect and feelings": Voices of West Indian childcare and domestic workers in New York City. In J. B. Cole (Ed.), *All American women: Lines that divide, ties that bind.* New York: Free Press.
Collet, M., Reniers, J., Frost, E., Yvert, F., Leclerc, A., Roth-Meyer, C., Ivanoff, B., & Meheus, A. (1988). Infertility in Central Africa: Infection is the cause. *International Journal of Gynecology & Obstetrics, 26,* 423–428.
Corea, G. (1985). *The mother machine: Reproductive technology from artificial insemination to artificial wombs.* New York: Harper & Row.
Corea, G., Klein, R. D., Hanmer, J., Holmes, H. B., Hoskings, B., Kishwar, M., Raymond, J., Rowland, R., & Steinbacher, R. (1987). *Man-made women: How new reproductive technologies affect women.* Bloomington: Indiana University Press.
Davis-Floyd, R., & Dumit, J. (Eds.). (1998). *Cyborg babies: From techno-sex to techno-tots.* New York: Routledge.
Davis-Floyd, R. E., & Sargent, C. F. (Eds.). (1997). *Childbirth and authoritative knowledge: Cross-cultural perspectives.* Berkeley: University of California Press.
Devroey, P., Vandervorst, M., Nagy, P., & Van Steirteghem, A. (1998). Do we treat the male or his gamete? *Human Reproduction, 13 (suppl. 1),* 178–185.
Ericksen, K., & Brunette, T. (1996). Patterns and predictors of infertility among African women: A cross-national survey of 27 nations. *Social Science & Medicine, 42,* 209–220.
Favot, I., Ngalula, J., Mgalla, Z., Klokke, A. H., Gumodoka, B., & Boerma, J. T. (1997). HIV infection and sexual behavior among women with infertility in Tanzania: A hospital-based study. *International Journal of Epidemiology, 26,* 414–419.
Feldman-Savelsberg, P. (1999). *Plundered kitchens, empty wombs: Threatened reproduction and identity in the Cameroon Grassfields.* Ann Arbor: University of Michigan Press.
Foucault, M. (1972). *The archaeology of knowledge and the discourse on language.* New York: Pantheon.
Franklin, S. (1990). Deconstructing "desperateness": The social construction of infertility in popular representations of new reproductive technologies. In M. McNeil, I. Varcoe, & S. Yearley (Eds.), *The new reproductive technologies.* London: Macmillan.
Franklin, S., & Ragone, H. (1998a). Introduction. In S. Franklin & H. Ragone (Eds.), *Reproducing reproduction: Kinship, power, and technological innovation* (pp. 1–14). Philadelphia: University of Pennsylvania Press.
Franklin, S., & Ragone, H. (Eds.). (1998b). *Reproducing reproduction: Kinship, power, and technological innovation.* Philadelphia: University of Pennsylvania Press.
Gerris, J. M. R. (1997). *A comparative investigation in the real efficacy of conventional therapies versus advanced reproductive technology in male reproductive disorders.* Antwerp: Universiteit van Antwerpen.

Ginsburg, F. D., & Rapp, R. (1991). The politics of reproduction. *Annual Review of Anthropology, 20,* 311–343.
Ginsburg, F. D., & Rapp, R. (Eds.). (1995a). *Conceiving the new world order: The global politics of reproduction.* Berkeley: University of California Press.
Ginsburg, F. D., & Rapp, R. (1995b). Introduction: Conceiving the new world order. In F. D. Ginsburg & R. Rapp (Eds.), *Conceiving the new world order: The global politics of reproduction* (pp. 1–17). Berkeley: University of California Press.
Greenhalgh, S. (1995a). Anthropology theorizes reproduction: Integrating practice, political economic, and feminist perspectives. In S. Greenhalgh (Ed.), *Situating fertility: Anthropology and demographic inquiry* (pp. 3–28). Cambridge: Cambridge University Press.
Greenhalgh, S. (Ed.). (1995b). *Situating fertility: Anthropology and demographic inquiry.* Cambridge: Cambridge University Press.
Greil, A. L. (1991). *Not yet pregnant: Infertile couples in contemporary America.* New Brunswick, NJ: Rutgers University Press.
Greil, A. L. (1997). Infertility and psychological distress: A critical review of the literature. *Social Science & Medicine, 45,* 1679–1704.
Handwerker, W. P. (Ed.) (1990). *Births and power: Social change and the politics of reproduction.* Boulder, CO: Westview Press.
Inhorn, M. C. (1994a). Interpreting infertility: Medical anthropological perspectives. *Social Science & Medicine, 39,* 459–461.
Inhorn, M. C. (1994b). *Quest for conception: Gender, infertility, and Egyptian medical traditions.* Philadelphia: University of Pennsylvania Press.
Inhorn, M. C. (1996). *Infertility and patriarchy: The cultural politics of gender and family life in Egypt.* Philadelphia: University of Pennsylvania Press.
Inhorn, M. C. (2001). Money, marriage, and morality: Constraints on IVF treatment seeking among infertile Egyptian couples. In C. M. Obermeyer (Ed.), *Cultural perspectives on reproductive health.* Oxford: Oxford University Press.
Inhorn, M. C. (2002). "The worms are weak": Male infertility and patriarchal paradoxes in Egypt. *Men & Masculinities,* in press.
Kamischke, A., & Neischlag, E. (1998). Conventional treatments of male infertility in the age of evidence-based andrology. *Human Reproduction, 13 (suppl. 1),* 62–75.
Kielmann, K. (1998). Barren ground: Contesting identities of infertile women in Pemba, Tanzania. In M. Lock & P. A. Kaufert (Eds.), *Pragmatic women and body politics* (pp. 127–163). Cambridge: Cambridge University Press.
Kirejczyk, M. (1996). *The blessings of technology? Gender and the debated introduction of in vitro fertilization in the Dutch health care system.* Utrecht: Van Arkel.
Klein, R. D. (1989). *Infertility: Women speak out about their experiences of reproductive medicine.* London: Pandora Press.
Kleinman, A. M. (1992). Local worlds of suffering: An interpersonal focus for ethnographies of illness experience. *Qualitative Health Research, 2,* 127–134.
Kleinman, A. M. (1995). *Writing at the margin: Discourse between anthropology and medicine.* Berkeley: University of California Press.
Lane, S. D. (1994). From population control to reproductive health: An emerging policy agenda. *Social Science & Medicine, 39,* 1303–1314.

Lane, S. D., & Cibula, D. A. (2000). Gender and health. In G. L. Albrecht, R. Fitzpatrick, & S. C. Scrimshaw (Eds.), *Handbook of social studies in health and medicine* (pp. 136–153). London: Sage.
Larsen, U. (1994). Sterility in sub-Saharan Africa. *Population Studies, 48,* 459–474.
Latour, B., & Woolgar, S. (1986). *Laboratory life: The social construction of scientific facts.* 2d ed. Princeton, NJ: Princeton University Press.
Lock, M., & Kaufert, P. A. (Eds.). (1998). *Pragmatic women and body politics.* Cambridge: Cambridge University Press.
Mohanty, C. T., Russo, A., & Torres, L. (1991). *Third World women and the politics of feminism.* Bloomington: Indiana University Press.
Morgan, L. M., & Michaels, M. W. (Eds.). (1999). *Fetal subjects, feminist positions.* Philadelphia: University of Pennsylvania Press.
Nicholson, R. F., & Nicholson, R. E. (1994). Assisted reproduction in Latin America. *Journal of Assisted Reproduction and Genetics, 11,* 438–444.
Nsiah-Jefferson, L., & Hall, E. J. (1989). Reproductive technology: Perspectives and implications for low-income women and women of color. In K. S. Ratcliff (Ed.), *Healing technology: Feminist perspectives* (pp. 93–117). Ann Arbor: University of Michigan Press.
Okonofua, F. E. (1996). The case against new reproductive technologies in developing countries. *British Journal of Obstetrics and Gynecology, 103,* 957–962.
Rapp, R. (1999). *Testing women, testing the fetus: The social impact of amniocentesis in America.* New York: Routledge.
Rapp, R., & Ginsburg, F. (1999). Relocating reproduction, generating culture. Paper presented at the invited session, The Anthropology of Reproduction: Trends and Trajectories, American Anthropological Association, 98th Annual Meeting, Chicago, November 19.
Ratcliff, K. S. (Ed.). (1989). *Healing technology: Feminist perspectives.* Ann Arbor: University of Michigan Press.
Reproductive Health Outlook. (1999). Infertility: Overview and lessons learned. Web site: http://www.rho.org.
Rothman, B. K. (1986). *The tentative pregnancy: Prenatal diagnosis and the future of motherhood.* New York: W. W. Norton.
Sandelowski, M. (1991). Compelled to try: The never-enough quality of conceptive technology. *Medical Anthropology Quarterly, (NS) 5,* 29–47.
Sandelowski, M. (1993). *With child in mind: Studies of the personal encounter with infertility.* Philadelphia: University of Pennsylvania Press.
Sandelowski, M., Harris, B. G., & Black, B. P. (1992). Relinquishing infertility: The work of pregnancy for infertile couples. *Qualitative Health Research, 2,* 282–301.
Sciarra, J. (1994). Infertility: An international health problem. *International Journal of Gynecology & Obstetrics, 46,* 155–163.
Sheth, S. S., & Malpani, A. N. (1997). Inappropriate use of new technology: Impact on women's health. *International Journal of Gynecology & Obstetrics, 58,* 159–165.
Shorter, E. (1977). *The making of the modern family.* New York: Basic Books.
Stanton, A. L., Tennen, J., Affleck, G., & Mendola, R. (1991). Cognitive appraisal and adjustment to infertility. *Women and Health, 17,* 1–15.

Stanworth, M. (Ed.). (1987). *Reproductive technologies: Gender, motherhood and medicine.* Cambridge: Polity Press.
Strathern, M. (1993). Introduction. In M. Strathern (Ed.), *Reproducing the future: Anthropology, kinship and the reproductive technologies* (pp. 1–12). Manchester: Manchester University Press.
Stuart-Macadam, P., & Dettwyler, K. (Eds.). (1995). *Breastfeeding: Biocultural perspectives.* Hawthorne, NY: Aldine de Gruyter.
Sundby, J. (1997). Infertility in The Gambia: Traditional and modern health care. *Patient Education and Counseling, 31,* 29–37.
Turiel, J. S. (1998). *Beyond second opinions: Making choices about fertility treatment.* Berkeley: University of California Press.
United Nations. (1995). *The world's women 1995: Trends and statistics.* New York: United Nations.
van Balen, F., & Trimbos-Kemper, T. C. M. (1993). Long-term infertile couples: A study of their well-being. *Journal of Psychosomatic Obstetrics and Gynecology, 16,* 137–144.
van Balen, F., & Trimbos-Kemper, T. C. M. (1995). Involuntary childless couples: Their desire to have children and their motives. *Journal of Psychosomatic Obstetrics and Gynecology, 16,* 137–144.
van Balen, F., Verdurmen, J. E. E., & Ketting, E. (1995). *Caring about infertility: Main results of the national survey about behavior regarding infertility.* Delft: Eburon.
van der Ploeg, I. (1995). Hermaphrodite patients: In vitro fertilization and the transformation of male infertility. *Science, Technology and Human Values, 20,* 460–481.
WHO (World Health Organization). (1975). *The epidemiology of infertility: Report of a WHO scientific group.* World Health Organization Technical Report Series No. 582.
WHO (World Health Organization). (1987a). Infections, pregnancies, and infertility: Perspectives on prevention. *Fertility and Sterility, 47,* 964–968.
WHO (World Health Organization). (1987b). *World Health Organization manual for the examination of human semen and semen-cervical mucus interaction.* Cambridge: Cambridge University Press.
WHO (World Health Organization). (1989). *Guidelines on diagnosis and treatment of infertility.* Copenhagen: World Health Organization Regional Office for Europe.
WHO (World Health Organization) (1993). *Manual for the standard investigation and diagnosis of the infertile couple.* Geneva: World Health Organization/Cambridge University Press.

TWO

The Uses of a "Disease"

Infertility as Rhetorical Vehicle

Margarete Sandelowski and Sheryl de Lacey

Infertility is a topic that evidently offers something for everyone. Since the advent in the late 1970s of in vitro fertilization (IVF) techniques to enhance fertility and to bypass physical and biological impediments to procreation, infertility has increasingly attracted the attention of a diverse and growing constituency, including behavioral, biological, and social scientists; scholars from the practice disciplines; ethicists, theologians, lawyers, and legislators; social activists and cultural critics; and journalists and television commentators. Indeed, the interest in infertility has engendered some strange bedfellows; for example, feminists have found themselves allied with pro-family (and often antifeminist) activists to denounce assisted reproductive techniques as alternatively antiwoman and antinature (e.g., Farquhar, 1996).

As both infertile and fertile women increasingly have been used as "test sites" for new drugs and surgeries (Klein & Rowland, 1989), infertility has itself become a discursive site for the examination and critique of a wide variety of phenomena, including human agency and objectification (Cussins 1996, 1998a); the culture of risk (Becker & Nachtigall, 1994); the politics of gender (Lorber, 1987); "genealogical bewilderment" (Humphrey & Humphrey, 1986); class, capitalism, and the commodification of human life (Raymond, 1993); deviance and stigma (Whiteford & Gonzalez, 1994); hegemony and concordance (Condit, 1994); and even discourse itself (Lloyd, 1997; van der Ploeg, 1995). More specifically, these scholars have found infertility fertile ground for exploring whether and how Western[1] (largely biomedical and media) constructions and management of infertility have contributed to alterations in the self and personal volition, women's heightened perceptions of risk for infertility and their continuing willingness to take risks to reverse infertility, and to the recirculation of gender and social class inequalities. They have also found in the various

Infertility around the Globe

New Thinking on Childlessness, Gender, and Reproductive Technologies

EDITED BY
Marcia C. Inhorn
Frank van Balen

UNIVERSITY OF CALIFORNIA PRESS
Berkeley Los Angeles London