

DUELING DUALISMS

*Male or Female?*

IN THE RUSH AND EXCITEMENT OF LEAVING FOR THE 1988 OLYMPICS, Maria Patiño, Spain's top woman hurdler, forgot the requisite doctor's certificate stating, for the benefit of Olympic officials, what seemed patently obvious to anyone who looked at her: she was female. But the International Olympic Committee (IOC) had anticipated the possibility that some competitors would forget their certificates of femininity. Patiño had only to report to the "femininity control head office,"¹ scrape some cells off the side of her cheek, and all would be in order—or so she thought.

A few hours after the cheek scraping she got a call. Something was wrong. She went for a second examination, but the doctors were mum. Then, as she rode to the Olympic stadium to start her first race, track officials broke the news: she had failed the sex test. She may have looked like a woman, had a woman's strength, and never had reason to suspect that she wasn't a woman, but the examinations revealed that Patiño's cells sported a Y chromosome, and that her labia hid testes within. Furthermore, she had neither ovaries nor a uterus.² According to the IOC's definition, Patiño was not a woman. She was barred from competing on Spain's Olympic team.

Spanish athletic officials told Patiño to fake an injury and withdraw without publicizing the embarrassing facts. When she refused, the European press heard about it and the secret was out. Within months after returning to Spain, Patiño's life fell apart. Spanish officials stripped her of past titles and barred her from further competition. Her boyfriend deserted her. She was evicted from the national athletic residence, her scholarship was revoked, and suddenly she had to struggle to make a living. The national press had a field day at her expense. As she later said, "I was erased from the map, as if I had never existed. I gave twelve years to sports."³

Down but not out, Patiño spent thousands of dollars consulting doctors about her situation. They explained that she had been born with a condition called *androgen insensitivity*. This meant that, although she had a Y chromosome and her testes made plenty of testosterone, her cells couldn't detect this masculinizing hormone. As a result, her body had never developed male characteristics. But at puberty her testes produced estrogen (as do the testes of all men), which, because of her body's inability to respond to its testosterone, caused her breasts to grow, her waist to narrow, and her hips to widen. Despite a Y chromosome and testes, she had grown up as a female and developed a female form.

Patiño resolved to fight the IOC ruling. "I knew I was a woman," she insisted to one reporter, "in the eyes of medicine, God and most of all, in my own eyes."⁴ She enlisted the help of Alison Carlson, a former Stanford University tennis player and biologist opposed to sex testing, and together they began to build a case. Patiño underwent examinations in which doctors "checked out her pelvic structures and shoulders to decide if she was feminine enough to compete."⁵ After two and a half years the International Amateur Athletic Federation (IAAF) reinstated her, and by 1992 Patiño had rejoined the Spanish Olympic squad, going down in history as the first woman ever to challenge sex testing for female athletes. Despite the IAAF's flexibility, however, the IOC has remained adamant: even if looking for a Y chromosome wasn't the most scientific approach to sex testing, testing *must* be done.

The members of the International Olympic Committee remain convinced that a more scientifically advanced method of testing will be able to reveal the true sex of each athlete. But why is the IOC so worried about sex testing? In part, IOC rules reflect cold war political anxieties: during the 1968 Olympics, for instance, the IOC instituted "scientific" sex testing in response to rumors that some Eastern European competitors were trying to win glory for the Communist cause by cheating—having men masquerade as women to gain unfair advantage. The only known case of a man infiltrating women's competition occurred back in 1936 when Hermann Ratjen, a member of the Nazi Youth, entered the women's high-jump competition as "Dora." His maleness didn't translate into much of an advantage: he made it to the finals, but came in fourth, behind three women.

Although the IOC didn't require modern chromosome screening in the interest of international politics until 1968, it had long policed the sex of Olympic competitors in an effort to mollify those who feared that women's participation in sports threatened to turn them into manly creatures. In 1912, Pierre de Coubertin, founder of the modern Olympics (from which women were originally banned), argued that "women's sports are all against the law

of nature.”⁶ If women were *by nature* not athletic competitors, then what was one to make of the sportswomen who pushed their way onto the Olympic scene? Olympic officials rushed to certify the femininity of the women they let through the door, because the very act of competing seemed to imply that they could not be true women.⁷ In the context of gender politics, employing sex police made a great deal of sense.⁸

Sex or Gender?

Until 1968 female Olympic competitors were often asked to parade naked in front of a board of examiners. Breasts and a vagina were all one needed to certify one’s femininity. But many women complained that this procedure was degrading. Partly because such complaints mounted, the IOC decided to make use of the modern “scientific” chromosome test. The problem, though, is that this test, and the more sophisticated polymerase chain reaction to detect small regions of DNA associated with testes development that the IOC uses today, cannot do the work the IOC wants it to do. A body’s sex is simply too complex. There is no either/or. Rather, there are shades of difference. In chapters 2–4 I’ll address how scientists, medical professionals, and the wider public have made sense of (or ought to make sense of) bodies that present themselves as neither entirely male nor entirely female. One of the major claims I make in this book is that labeling someone a man or a woman is a social decision. We may use scientific knowledge to help us make the decision, but only our beliefs about gender—not science—can define our sex. Furthermore, our beliefs about gender affect what kinds of knowledge scientists produce about sex in the first place.

Over the last few decades, the relation between *social expression* of masculinity and femininity and their *physical underpinnings* has been hotly debated in scientific and social arenas. In 1972 the sexologists John Money and Anke Ehrhardt popularized the idea that sex and gender are separate categories. *Sex*, they argued, refers to physical attributes and is anatomically and physiologically determined. *Gender* they saw as a psychological transformation of the self—the internal conviction that one is either male or female (gender identity) and the behavioral expressions of that conviction.⁹

Meanwhile, the second-wave feminists of the 1970s also argued that sex is distinct from gender—that social institutions, themselves designed to perpetuate gender inequality, produce most of the differences between men and women.¹⁰ Feminists argued that although men’s and women’s bodies serve different reproductive functions, few other sex differences come with the territory, unchangeable by life’s vicissitudes. If girls couldn’t learn math as easily

as boys, the problem wasn't built into their brains. The difficulty resulted from gender norms—different expectations and opportunities for boys and girls. Having a penis rather than a vagina is a sex difference. Boys performing better than girls on math exams is a gender difference. Presumably, the latter could be changed even if the former could not.

Money, Ehrhardt, and feminists set the terms so that *sex* represented the body's anatomy and physiological workings and *gender* represented social forces that molded behavior.¹¹ Feminists did not question the realm of physical sex; it was the psychological and cultural meanings of these differences—gender—that was at issue. But feminist definitions of sex and gender left open the possibility that male/female differences in cognitive function and behavior¹² could *result* from sex differences, and thus, in some circles, the matter of sex versus gender became a debate about how “hardwired” intelligence and a variety of behaviors are in the brain,¹³ while in others there seemed no choice but to ignore many of the findings of contemporary neurobiology.

In ceding the territory of physical sex, feminists left themselves open to renewed attack on the grounds of biological difference.¹⁴ Indeed, feminism has encountered massive resistance from the domains of biology, medicine, and significant components of social science. Despite many positive social changes, the 1970s optimism that women would achieve full economic and social equality once gender inequity was addressed in the social sphere has faded in the face of a seemingly recalcitrant inequality.¹⁵ All of which has prompted feminist scholars, on the one hand, to question the notion of sex itself,¹⁶ while on the other to deepen their inquiry into what we might mean by words such as *gender*, *culture*, and *experience*. The anthropologist Henrietta A. Moore, for example, argues against reducing accounts of gender, culture, and experience to their “linguistic and cognitive elements.” In this book (especially in chapter 9) I argue, as does Moore, that “what is at issue is the embodied nature of identities and experience. Experience . . . is not individual and fixed, but irredeemably social and processual.”¹⁷

Our bodies are too complex to provide clear-cut answers about sexual difference. The more we look for a simple physical basis for “sex,” the more it becomes clear that “sex” is not a pure physical category. What bodily signals and functions we define as male or female come already entangled in our ideas about gender. Consider the problem facing the International Olympic Committee. Committee members want to decide definitively who is male and who is female. But how? If Pierre de Coubertin were still around, the answer would be simple: anybody who desired to compete could not, by definition, be a female. But those days are past. Could the IOC use muscle strength as some

measure of sex? In some cases. But the strengths of men and women, especially highly trained athletes, overlap. (Remember that three women beat Hermann Ratjen's high jump). And although Maria Patiño fit a commonsense definition of femininity in terms of looks and strength, she also had testes and a Y chromosome. But why should these be the deciding factors?

The IOC may use chromosome or DNA tests or inspection of the breasts and genitals to ascertain the sex of a competitor, but doctors faced with uncertainty about a child's sex use different criteria. They focus primarily on reproductive abilities (in the case of a potential girl) or penis size (in the case of a prospective boy). If a child is born with two X chromosomes, oviducts, ovaries, and a uterus on the inside, but a penis and scrotum on the outside, for instance, is the child a boy or a girl? Most doctors declare the child a girl, despite the penis, because of her potential to give birth, and intervene using surgery and hormones to carry out the decision. Choosing which criteria to use in determining sex, and choosing to make the determination at all, are social decisions for which scientists can offer no absolute guidelines.

Real or Constructed?

I enter the debates about sex and gender as a biologist and a social activist.¹⁸ Daily, my life weaves in and out of a web of conflict over the politics of sexuality and the making and using of knowledge about the biology of human behavior. The central tenet of this book is that truths about human sexuality created by scholars in general and by biologists in particular are one component of political, social, and moral struggles about our cultures and economies.¹⁹ At the same time, components of our political, social, and moral struggles become, quite literally, embodied, incorporated into our very physiological being. My intent is to show how these mutually dependent claims work, in part by addressing such issues as how—through their daily lives, experiments, and medical practices—scientists create truths about sexuality; how our bodies incorporate and confirm these truths; and how these truths, sculpted by the social milieu in which biologists practice their trade, in turn refashion our cultural environment.

My take on the problem is idiosyncratic, and for good reason. Intellectually, I inhabit three seemingly incompatible worlds. In my home department I interact with molecular biologists, scientists who examine living beings from the perspective of the molecules from which they are built. They describe a microscopic world in which cause and effect remain mostly inside a single cell. Molecular biologists rarely think about interacting organs within an indi-

vidual body, and even less often about how a body bounded by skin interacts with the world on the other side of the skin. Their vision of what makes an organism tick is decidedly bottom up, small to large, inside to outside.

I also interact with a virtual community—a group of scholars drawn together by a common interest in sexuality—and connected by something called a listserv. On a listserv, one can pose questions, think out loud, comment on relevant news items, argue about theories of human sexuality, and report the latest research findings. The comments are read by a group of people hooked together via electronic mail. My listserv (which I call “Loveweb”) consists of a diverse group of scholars—psychologists, animal behaviorists, hormone biologists, sociologists, anthropologists, and philosophers. Although many points of view coexist in this group, the vocal majority favor body-based, biological explanations of human sexual behavior. Loveweb members have technical names for preferences they believe to be immutable. In addition to homosexual, heterosexual, and bisexual, for example, they speak of *hebephilia* (attracted primarily to pubescent girls), *ephebephilia* (aroused by young males in their late teens or early twenties), *pedophilia* (aroused by children), *gynephilia* (aroused by adult women), and *androphilia* (attracted to adult men). Many Loveweb members believe that we acquire our sexual essence before birth and that it unfolds as we grow and develop.²⁰

Unlike molecular biologists and Loveweb members, feminist theorists view the body not as essence, but as a bare scaffolding on which discourse and performance build a completely acculturated being. Feminist theorists write persuasively and often imaginatively about the processes by which culture molds and effectively creates the body. Furthermore, they have an eye on politics (writ large), which neither molecular biologists nor Loveweb participants have. Most feminist scholars concern themselves with real-world power relationships. They have often come to their theoretical work because they want to understand (and change) social, political, and economic inequality. Unlike the inhabitants of my other two worlds, feminist theorists reject what Donna Haraway, a leading feminist theoretician, calls “the God-trick”—producing knowledge from above, from a place that denies the individual scholar’s location in a real and troubled world. Instead, they understand that all scholarship adds threads to a web that positions racialized bodies, sexes, genders, and preferences in relationship to one another. New or differently spun threads change our relationships, change how we are in the world.²¹

Traveling among these varied intellectual worlds produces more than a little discomfort. When I lurk on Loveweb, I put up with gratuitous feminist-bashing aimed at some mythic feminist who derides biology and seems to have a patently stupid view of how the world works. When I attend feminist

conferences, people howl in disbelief at the ideas debated on Loveweb. And the molecular biologists don't think much of either of the other worlds. The questions asked by feminists and Loveweb participants seem too complicated; studying sex in bacteria or yeast is the only way to go.

To my molecular biology, Loveweb, and feminist colleagues, then, I say the following: as a biologist, I believe in the material world. As a scientist, I believe in building specific knowledge by conducting experiments. But as a feminist Witness (in the Quaker sense of the word) and in recent years as a historian, I also believe that what we call "facts" about the living world are not universal truths. Rather, as Haraway writes, they "are rooted in specific histories, practices, languages and peoples."²² Ever since the field of biology emerged in the United States and Europe at the start of the nineteenth century, it has been bound up in debates over sexual, racial, and national politics.²³ And as our social viewpoints have shifted, so has the science of the body.²⁴

Many historians mark the seventeenth and eighteenth centuries as periods of great change in our concepts of sex and sexuality.²⁵ During this period a notion of legal equality replaced the feudal exercise of arbitrary and violent power given by divine right. As the historian Michel Foucault saw it, society still required some form of discipline. A growing capitalism needed new methods to control the "insertion of bodies into the machinery of production and the adjustment of the phenomena of population to economic processes."²⁶ Foucault divided this power over living bodies (*bio-power*) into two forms. The first centered on the individual body. The role of many science professionals (including the so-called human sciences—psychology, sociology, and economics) became to optimize and standardize the body's function.²⁷ In Europe and North America, Foucault's standardized body has, traditionally, been male and Caucasian. And although this book focuses on gender, I regularly discuss the ways in which the ideas of both race and gender emerge from underlying assumptions about the body's physical nature.²⁸ Understanding how race and gender work—together and independently—helps us learn more about how the social becomes embodied.

Foucault's second form of bio-power—"a *biopolitics of the population*"²⁹—emerged during the early nineteenth century as pioneer social scientists began to develop the survey and statistical methods needed to supervise and manage "births and mortality, the level of health, life expectancy and longevity."³⁰ For Foucault, "discipline" had a double meaning. On the one hand, it implied a form of control or punishment; on the other, it referred to an academic body of knowledge—the discipline of history or biology. The disciplinary knowledge developed in the fields of embryology, endocrinology, surgery,

psychology, and biochemistry have encouraged physicians to attempt to control the very gender of the body—including “its capacities, gestures, movements, location and behaviors.”³¹

By helping the normal take precedence over the natural, physicians have also contributed to populational biopolitics. We have become, Foucault writes, “a society of normalization.”³² One important mid-twentieth-century sexologist went so far as to name the male and female models in his anatomy text *Norma and Normman* (*sic*).³³ Today we see the notion of pathology applied in many settings—from the sick, diseased, or different body,³⁴ to the single-parent family in the urban ghetto.³⁵ But imposing a gender norm is socially, not scientifically, driven. The lack of research into the normal distributions of genital anatomy, as well as many surgeons’ lack of interest in using such data when they do exist (discussed in chapters 3 and 4), clearly illustrate this claim. From the viewpoint of medical practitioners, progress in the handling of intersexuality involves maintaining the normal. Accordingly, there *ought* to be only two boxes: male and female. The knowledge developed by the medical disciplines empowers doctors to maintain a mythology of the normal by changing the intersexual body to fit, as nearly as possible, into one or the other cubbyhole.

One person’s medical progress, however, can be another’s discipline and control. Intersexuals such as Maria Patiño have unruly—even heretical—bodies. They do not fall naturally into a binary classification; only a surgical shoehorn can put them there. But why should we care if a “woman” (defined as having breasts, a vagina, uterus, ovaries, and menstruation) has a “clitoris” large enough to penetrate the vagina of another woman? Why should we care if there are individuals whose “natural biological equipment” enables them to have sex “naturally” with both men and women? Why must we amputate or surgically hide that “offending shaft” found on an especially large clitoris? The answer: to maintain gender divisions, we must control those bodies that are so unruly as to blur the borders. Since intersexuals quite literally embody both sexes, they weaken claims about sexual difference.

This book reflects a shifting politics of science and of the body. I am deeply committed to the ideas of the modern movements of gay and women’s liberation, which argue that the way we traditionally conceptualize gender and sexual identity narrows life’s possibilities while perpetuating gender inequality. In order to shift the politics of the body, one must change the politics of science itself. Feminists (and others) who study how scientists create empirical knowledge have begun to reconceptualize the very nature of the scientific process.³⁶ As with other social arenas, such scholars understand practical, empirical knowledge to be imbued with the social and political issues of its

time. I stand at the intersection of these several traditions. On the one hand, scientific and popular debates about intersexuals and homosexuals—bodies that defy the norms of our two-sex system—are deeply intertwined. On the other, beneath the debates about what these bodies mean and how to treat them lie struggles over the meaning of objectivity and the timeless nature of scientific knowledge.

Perhaps nowhere are these struggles more visible than in the biological accounts of what we would today call sexual orientation or sexual preference. Consider, for instance, a television newsmagazine segment about married women who “discovered,” often in their forties, that they were lesbian. The show framed the discussion around the idea that a woman who has sex with men must be heterosexual, while a woman who falls in love with another woman must be lesbian.³⁷ On this show there seemed to be only these two possibilities. Even though the women interviewed had had active and satisfying sex lives with their husbands and produced and raised families, they knew that they must “be” lesbian the minute they found themselves attracted to a woman. Furthermore, they felt it likely that they must always have been lesbian without knowing it.

The show portrayed sexual identity as a fundamental reality: a woman is either inherently heterosexual or inherently lesbian. And the act of coming out as a lesbian can negate an entire lifetime of heterosexual activity! Put this way, the show’s depiction of sexuality sounds absurdly oversimplified. And yet, it reflects some of our most deeply held beliefs—so deeply held, in fact, that a great deal of scientific research (on animals as well as humans) is designed around this dichotomous formulation (as I discuss in some detail in chapters 6–8).³⁸

Many scholars mark the start of modern scientific studies of human homosexuality with the work of Alfred C. Kinsey and colleagues, first published in 1948. Their surveys of sexual behavior in men and women provided modern sex researchers with a set of categories useful for measuring and analyzing sexual behaviors.³⁹ For both men and women, they used a rating scale of 0 to 6, with 0 being 100 percent heterosexual, 6 being 100 percent homosexual. (An eighth category—“X”—was for individuals who experienced no erotic attractions or activities.) Although they designed a scale with discrete categories, Kinsey and co-workers stressed that “the reality includes individuals of every intermediate type, lying in a continuum between the two extremes and between each and every category on the scale.”⁴⁰

The Kinsey studies offered new categories defined in terms of sexual arousal—especially orgasm—rather than allowing terms such as *affection*, *marriage*, or *relationship* to contribute to definitions of human sexuality.⁴¹ Sexu-

ality remained an individual characteristic, not something produced within relationships in particular social settings. Exemplifying my claim that with the very act of measuring, scientists can change the social reality they set out to quantify, I note that today Kinsey's categories have taken on a life of their own. Not only do sophisticated gays and lesbians occasionally refer to themselves by a Kinsey number (such as in a personal ad that might begin "tall, muscular Kinsey 6 seeks . . ."), but many scientific studies use the Kinsey scale to define their study population.⁴²

Although many social scientists understand the inadequacy of using the single word *homosexual* to describe same-sex desire, identity, and practice, the linear Kinsey scale still reigns supreme in scholarly work. In studies that search for genetic links to homosexuality, for example, the middle of the Kinsey scale disappears; researchers seek to compare the extreme ends of the spectrum in hopes of maximizing the chance that they will find something of interest.⁴³ Multidimensional models of homosexuality exist. Fritz Klein, for example, created a grid with seven variables (sexual attraction, sexual behavior, sexual fantasies, emotional preference, social preference, self-identification, hetero/homo lifestyle) superimposed on a time scale (past, present, future).⁴⁴ Nevertheless, one research team, reporting on 144 studies of sexual orientation published in the *Journal of Homosexuality* from 1974 to 1993, found that only 10 percent of these studies used a multidimensional scale to assess homosexuality. About 13 percent used a single scale, usually some version of the Kinsey numbers, while the rest used self-identification (33 percent), sexual preference (4 percent), behavior (9 percent), or, most shockingly for an academic publication, never clearly described their methods (31 percent).⁴⁵

Just as these examples from contemporary sociology show that the categories used to define, measure, and analyze human sexual behavior change with time, so too has a recent explosion of scholarship on the social history of human sexuality shown that the social organization and expression of human sexuality are neither timeless nor universal. Historians are just beginning to pry loose information from the historical record, and any new overviews written are sure to differ,⁴⁶ but I offer a cartoon summary of some of this work in figure 1.1.

As historians gather information, they also argue about the nature of history itself. The historian David Halperin writes: "The real issue confronting any cultural historian of antiquity, and any critic of contemporary culture, is . . . how to recover the terms in which the experiences of individuals belonging to past societies were actually constituted."⁴⁷ The feminist historian Joan Scott makes a similar argument, suggesting that historians must not assume



FIGURE 1.1: A cartoon history of sex and gender. (Source: Diane DiMassa, for the author)

that the term *experience* contains a self-evident meaning. Instead, they must try to understand the workings of the complex and changing processes “by which identities are ascribed, resisted, or embraced and ‘to note’ which processes themselves are unremarked and indeed achieve their effect because they are not noticed.”⁴⁸

For example, in her book *The Woman Beneath the Skin*, the historian of science Barbara Duden describes coming upon an eight-volume medical text.

Written in the eighteenth century by a practicing physician, the books describe over 1,800 cases involving diseases of women. Duden found herself unable to use twentieth-century medical terms to reconstruct what illnesses these women had. Instead she noticed “bits and pieces of medical theories that would have been circulating, combined with elements from popular culture; self-evident bodily perceptions appear alongside things that struck [her] as utterly improbable.” Duden describes her intellectual anguish as she became more and more determined to understand these eighteenth-century German female bodies on their own terms:

To gain access to the inner, invisible bodily existence of these ailing women, I had to venture across the boundary that separates . . . the inner body beneath the skin, from the world around it . . . the body and its environment have been consigned to opposing realms: on the one side are the body, nature, and biology, stable and unchanging phenomena; on the other side are the social environment and history, realms of constant change. With the drawing of this boundary the body was expelled from history.⁴⁹

In contrast to Duden’s anguish, many historians of sexuality have leaped enthusiastically into their new field, debating with one another as they dug into their freshly discovered resources. They delighted in shocking the reader with sentences such as: “The year 1992 marked the 100th anniversary of heterosexuality in America”⁵⁰ and “From 1700–1900 the citizens of London made a transition from three sexes to four genders.”⁵¹ What do historians mean by such statements? Their essential point is that for as far back as one can gather historical evidence (from primitive artwork to the written word), humans have engaged in a variety of sexual practices, but that this sexual activity is bound to historical contexts. That is, sexual practices and societal understandings of them vary not only across cultures but over time as well.

The social scientist Mary McIntosh’s 1968 article, “The Homosexual Role,” provided the touchstone that pushed scholars to consider sexuality as a historical phenomenon.⁵² Most Westerners, she pointed out, assumed that people’s sexuality could be classified two or three ways: homosexual, heterosexual, and bisexual.⁵³ McIntosh argued that this perspective wasn’t very informative. A static view of homosexuality as a timeless, physical trait, for instance, didn’t tell us much about why different cultures defined homosexuality differently, or why homosexuality seemed more acceptable in certain

times and places than in others.⁵⁴ An important corollary to McIntosh's insistence on a history of homosexuality is that heterosexuality, and indeed all forms of human sexuality, have a history.

Many scholars embraced McIntosh's challenge to give human sexual expression a past. But disagreement about the implications of this past abounds.⁵⁵ The authors of books such as *Gay American History* and *Surpassing the Love of Men* eagerly searched the past for role models that could offer psychological affirmation to members of the nascent gay liberation movement.⁵⁶ Just as with the initial impulses of the women's movement to find heroines worthy of emulation, early "gay" histories looked to the past in order to make a case for social change in the present. Homosexuality, they argued, has always been with us; we should finally bring it into the cultural mainstream.

The initial euphoria induced by these scholars' discovery of a gay past was soon complicated by heated debates about the meanings and functions of history. Were our contemporary categories of sexuality inappropriate for analyzing different times and places? If gay people, in the present-day sense, had always existed, did that mean that the condition is inherited in some portion of the population? Could the fact that historians found evidence of homosexuality in whatever era they studied be seen as evidence that homosexuality is a biologically determined trait? Or could history only show us how cultures organize sexual expression differently in particular times and places?⁵⁷ Some found the latter possibility liberating. They maintained that behaviors that might seem to be constant actually had totally different meanings in different times and places. Could the apparent fact that in ancient Greece, love between older and younger men was an expected component of the development of free male citizens mean that biology had nothing to do with human sexual expression?⁵⁸ If history helped prove that sexuality was a social construction, it could also show how we had arrived at our present arrangements and, most important, offer insights into how to achieve the social and political change for which the gay liberation movement was battling.

Many historians believe that our modern concepts of sex and desire first made their appearance in the nineteenth century. Some point symbolically to the year 1869, when a German legal reformer seeking to change antisodomy laws first publicly used the word *homosexuality*.⁵⁹ Merely coining a new term did not magically create twentieth-century categories of sexuality, but the moment does seem to mark the beginning of their gradual emergence. It was during those years that physicians began to publish case reports of homosexuality—the first in 1869 in a German publication specializing in psychiatric

and nervous illness.⁶⁰ As the scientific literature grew, specialists emerged to collect and systematize the narratives. The now-classic works of Krafft-Ebing and Havelock Ellis completed the transfer of homosexual behaviors from publicly accessible activities to ones managed at least in part by medicine.⁶¹

The emerging definitions of homo- and heterosexuality were built on a two-sex model of masculinity and femininity.⁶² The Victorians, for example, contrasted the sexually aggressive male with the sexually indifferent female. But this created a mystery. If only men felt active desire, how could two women develop a mutual sexual interest? The answer: one of the women had to be an *invert*, someone with markedly masculine attributes. This same logic applied to male homosexuals, who were seen as more effeminate than heterosexual men.⁶³ As we will see in chapter 8, these concepts linger in late-twentieth-century studies of homosexual behaviors in rodents. A lesbian rat is she who mounts; a gay male rat is he who responds to being mounted.⁶⁴

In ancient Greece, males who engaged in same-sex acts changed, as they aged, from feminine to masculine roles.⁶⁵ In contrast, by the early part of the twentieth century, someone engaging in homosexual acts *was*, like the married lesbians on the TV news show, a homosexual, a person constitutionally disposed to homosexuality. Historians attribute the emergence of this new homosexual body to widespread social, demographic, and economic changes occurring in the nineteenth century. In America, many men and eventually some women who had in previous generations remained on the family farm found urban spaces in which to gather. Away from the family's eyes, they were freer to pursue their sexual interests. Men seeking same-sex interactions gathered in bars or in particular outdoor spots; as their presence became more obvious, so too did attempts to control their behavior. In response to police and moral reformers, self-consciousness about their sexual behaviors emerged—a budding sense of identity.⁶⁶

This forming identity contributed to its own medical rendering. Men (and later women) who identified themselves as homosexual now sought medical help and understanding. And as medical reports proliferated, homosexuals used them to paint their own self-descriptions. “By helping to give large numbers of people an identity and a name, medicine also helped to shape these people's experience and change their behavior, creating not just a new disease, but a new species of person, ‘the modern homosexual.’”⁶⁷

Homosexuality may have been born in 1869, but the modern heterosexual required another decade of gestation. In Germany in 1880 the word *heterosexual* made its public debut in a work defending homosexuality.⁶⁸ In 1892, heterosexuality crossed the ocean to America, where, after some period of

debate, a consensus developed among medical men that “heterosexual referred to a normal ‘other-sex’ Eros. [The doctors] proclaimed a new heterosexual separatism—an erotic apartheid that forcefully segregated the sex normals from the sex perverts.”⁶⁹

Through the 1930s the concept of heterosexuality fought its way into the public consciousness, and by World War II, heterosexuality seemed a permanent feature of the sexual landscape. Now, the concept has come under heavy fire. Feminists daily challenge the two-sex model, while a strongly self-identified gay and lesbian community demands the right to be thoroughly normal. Transsexuals, transgendered people, and, as we shall see in the next three chapters, a blossoming organization of intersexuals all have formed social movements to include diverse sexual beings under the umbrella of normality.

The historians whose work I’ve just recounted emphasize discontinuity. They believe that looking “for general laws about sexuality and its historical evolution will be defeated by the sheer variety of past thought and behavior.”⁷⁰ But some disagree. The historian John Boswell, for instance, applies Kinsey’s classification scheme to ancient Greece. How the Greeks interpreted the *molle* (feminine man) or the *tribade* (masculine woman), in Boswell’s view, did not necessarily matter. The existence of these two categories, which Boswell might consider to be Kinsey 6s, shows that homosexual bodies or essences have existed across the centuries. Boswell acknowledges that humans organized and interpreted sexual behaviors differently in different historical eras. But he suggests that a similar range of bodies predisposed to particular sexual activities existed then and now. “Constructions and context shape the articulation of sexuality,” he insists, “but they do not efface recognition of erotic preference as a potential category.”⁷¹ Boswell regards sexuality as “real” rather than “socially constructed.” While Halperin sees desire as a product of cultural norms, Boswell implies we are quite possibly born with particular sexual inclinations wired into our bodies. Growth, development, and the acquisition of culture show us how to express our inborn desires, he argues, but do not wholly create them.

Scholars have yet to resolve the debate about the implications of a history of sexuality. The historian Robert Nye compares historians to anthropologists. Both groups catalogue “curious habits and beliefs” and try, Nye writes, “to find in them some common pattern of resemblance.”⁷² But what we conclude about people’s past experiences depends to a large extent on how much we believe that our categories of analysis transcend time and place. Suppose for a minute that we had a few time-traveling clones—genetically identical humans living in ancient Greece, in seventeenth-century Europe, and in the

contemporary United States. Boswell would say that if a particular clone was homosexual in ancient Greece, he would also be homosexual in the seventeenth century or today (figure 1.2, Model A). The fact that gender structures differ in different times and places might shape the invert's defiance, but would not create it. Halperin, however, would argue that there is no guarantee that the modern clone of an ancient Greek heterosexual would also be heterosexual (figure 1.2, Model B). The identical body might express different forms of desire in different eras.

There is no way to decide whose interpretation is right. Despite surface similarities, we cannot know whether yesterday's *tribade* is today's butch or whether the middle-aged Greek male lover is today's pedophile.⁷³

Nature or Nurture?

While historians have looked to the past for evidence of whether human sexuality is inborn or socially constructed, anthropologists have pursued the same questions in their studies of sexual behaviors, roles, and expressions found in contemporary cultures around the globe. Those examining data from a wide variety of non-Western cultures have discerned two general patterns.⁷⁴ Some cultures, like our own, define a permanent role for those who engage in same-sex coupling—"institutionalized homosexuality," in Mary McIntosh's terminology.⁷⁵

In contrast are those societies in which all adolescent boys, as part of an expected growth process, engage in genital acts with older men. These associations may be brief and highly ritualized or may last for several years. Here oral-genital contact between two males does not signify a permanent condition or special category of being. What defines sexual expression in such cultures is not so much the sex of one's partner as the age and status of the person with whom one couples.⁷⁶

Anthropologists study vastly differing peoples and cultures with two goals in mind. First, they want to understand human variation—the diverse ways in which human beings organize society in order to eat and reproduce. Second, many anthropologists look for human universals. Like historians, anthropologists are divided about what information drawn from any one culture can tell them about another, or whether underlying differences in the expression of sexuality matter more or less than apparent commonalities.⁷⁷ In the midst of such disagreements, anthropological data are, nevertheless, often deployed in arguments about the nature of human sexual behavior.⁷⁸

The anthropologist Carol Vance writes that the field of anthropology today reflects two contradictory strains of thought. The first she refers to as the

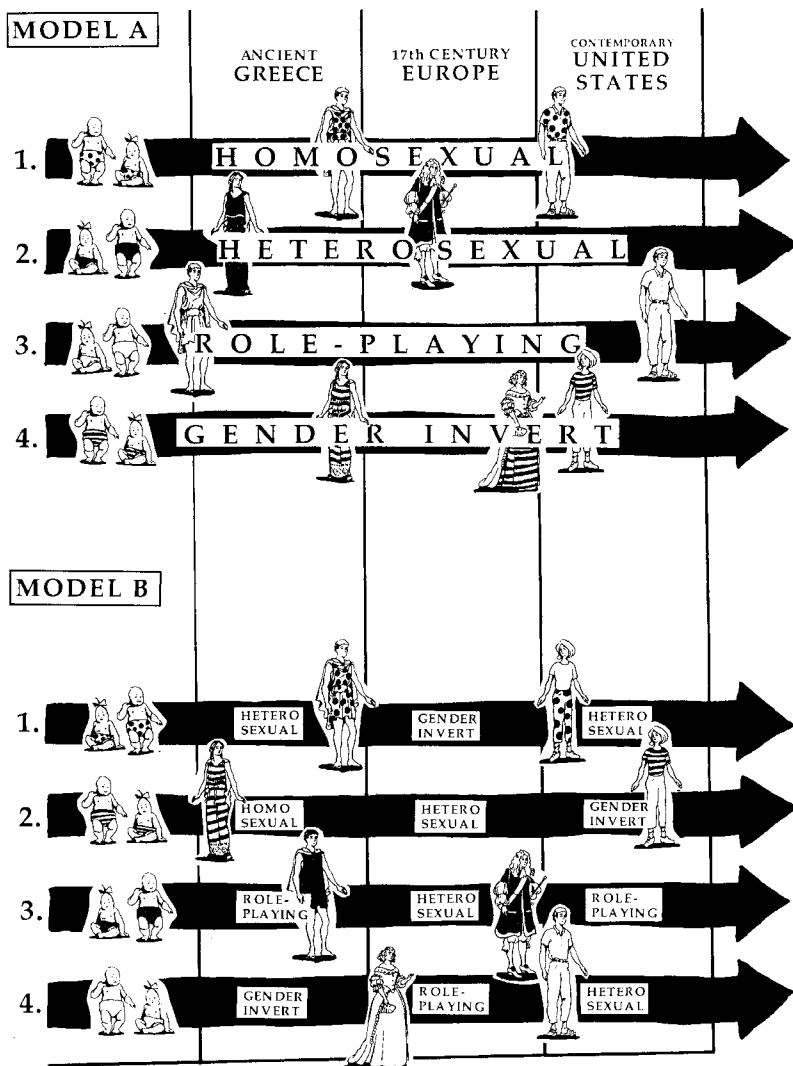


FIGURE 1.2: *Model A*: Reading *essentialism* from the historical record. A person with inborn homosexual tendencies would be homosexual, no matter what historical era. *Model B*: Reading *constructionism* from the historical record. A person of a particular genetic make-up might or might not become homosexual, depending on the culture and historical period in which he or she was raised. (Source: Alyce Santoro, for the author)

“cultural influences model of sexuality,” which, even as it emphasizes the importance of culture and learning in the molding of sexual behavior, nevertheless assumes “the bedrock of sexuality . . . to be universal and biologically determined; in the literature it appears as the ‘sex drive’ or ‘impulse.’”⁷⁹ The second approach, Vance says, is to interpret sexuality entirely in terms of social construction. A moderate social constructionist might argue that the same physical act can carry different social meanings in different cultures,⁸⁰ while a more radical constructionist might argue that “sexual desire is itself constructed by culture and history from the energies and capacities of the body.”⁸¹

Some social constructionists are interested in uncovering cross-cultural similarities. For instance, the anthropologist Gil Herdt, a moderate constructionist, catalogs four primary cultural approaches to the organization of human sexuality. *Age-structured homosexuality*, such as that found in ancient Greece, also appears in some modern cultures in which adolescent boys go through a developmental period in which they are isolated with older males and perform fellatio on a regular basis. Such acts are understood to be part of the normal process of becoming an adult heterosexual. In *gender-reversed homosexuality*, “same-sex activity involves a reversal of normative sex-role comportment: males dress and act as females, and females dress and behave as males.”⁸² Herdt used the concept of *role-specialized homosexuality* for cultures that sanction same-sex activity only for people who play a particular social role, such as a shaman. Role-specialized homosexuality contrasts sharply with our own cultural creation: *the modern gay movement*. To declare oneself “gay” in the United States is to adopt an identity and to join a social and sometimes political movement.

Many scholars embraced Herdt’s work for providing new ways to think about the status of homosexuality in Europe and America. But although he has provided useful new typologies for the cross-cultural study of sexuality, others argue that Herdt carries with him assumptions that reflect his own culture.⁸³ The anthropologist Deborah Elliston, for instance, believes that using the term *homosexuality* to describe practices of semen exchange in Melanesian societies “imputes a Western model of sexuality . . . that relies on Western ideas about gender, erotics and personhood, and that ultimately obscures the meanings that hold for these practices in Melanesia.” Elliston complains that Herdt’s concept of age-structured sexuality obscures the composition of the category “sexual,” and that it is precisely this category that requires clarification to begin with.⁸⁴

When they turn their attention more generally to the relationships between gender and systems of social power, anthropologists face the same sorts

of intellectual difficulties when studying “third” genders in other cultures. During the 1970s European and North American feminist activists hoped that anthropologists could provide empirical data to support their political arguments for gender equality. If, somewhere in the world, egalitarian societies existed, wouldn't that imply that our own social structures were not inevitable? Alternatively, what if women in every culture known to humankind had a subordinate status? Didn't such cross-cultural similarity mean, as more than one writer suggested, that women's secondary standing must be biologically ordained?⁸⁵

When feminist anthropologists traveled around the world in search of cultures sporting the banner of equity, they did not return with happy tidings. Most thought, as the feminist anthropologist Sherry Ortner writes, “that men were in some way or other ‘the first sex.’”⁸⁶ But critiques of these early cross-cultural analyses mounted, and in the 1990s some prominent feminist anthropologists reassessed the issue. The same problem encountered with collecting information by survey emerges in cross-cultural comparisons of social structures. Simply put, anthropologists must invent categories into which they can sort collected information. Inevitably, some of the invented categories involve the anthropologists' own unquestioned axioms of life, what some scholars call “incurable propositions.” The idea that there are only two sexes is an incurable proposition,⁸⁷ and so too is the idea that anthropologists would know sexual equality when they saw it.

Ortner thinks that argument about the universality of sexual inequality has continued for more than two decades because anthropologists assumed that each society would be internally consistent, an expectation she now believes to be unreasonable: “no society or culture is totally consistent. Every society/culture has some axes of male prestige and some of female, some of gender equality, and some (sometimes many) axes of prestige that have nothing to do with gender. The problem in the past has been that all of us . . . were trying to pigeonhole each case.” Now she argues instead that “the most interesting things about any given case is precisely the multiplicity of logics operating, of discourses being spoken, of practices of prestige and power in play.”⁸⁸ If one attends to the dynamics, the contradictions, and minor themes, Ortner believes, it becomes possible to see both the currently dominant system *and* the potential for minor themes to become major ones.⁸⁹

But feminists, too, have incurable propositions, and a central one has been that all cultures, as the Nigerian anthropologist Oyeronke Oyewumi writes, “organize their social world through a perception of human bodies” as male or female.⁹⁰ In taking European and North American feminists to task over this proposition, Oyewumi shows how the imposition of a system of

gender—in this case, through colonialism followed by scholarly imperialism—can alter our understandings of ethnic and racial difference. In her own detailed analysis of Yoruba culture, Oyewumi finds that relative age is a far more significant social organizer. Yoruba pronouns, for example, do not indicate sex, but rather who is older or younger than the speaker. What they think about how the world works shapes the knowledge that scholars produce about the world. That knowledge, in turn, affects the world at work.

If Yoruba intellectuals had constructed the original scholarship on Yorubaland, Oyewumi thinks that “seniority would have been privileged over gender.”⁹¹ Seeing Yoruba society through the lens of seniority rather than that of gender would have two important effects. First, if Euro-American scholars learned about Nigeria from Yoruba anthropologists, our own belief systems about the universality of gender might change. Eventually, such knowledge might alter our own gender constructs. Second, the articulation of a seniority-based vision of social organization among the Yoruba would, presumably, reinforce such social structures. Oyewumi finds, however, that African scholarship often imports European gender categories. And “by writing about any society through a gendered perspective, scholars necessarily write gender into that society. . . . Thus scholarship is implicated in the process of gender-formation.”⁹²

Thus historians and anthropologists disagree about how to interpret human sexuality across cultures and history. Philosophers even dispute the validity of the words *homosexual* and *heterosexual*—the very terms of the argument.⁹³ But wherever they fall along the social constructionist spectrum, most argue from the assumption that there is a fundamental split between nature and culture, between “real bodies” and their cultural interpretations. I take seriously the ideas of Foucault, Haraway, Scott, and others that our bodily experiences are brought into being by our development in particular cultures and historical periods. But especially as a biologist, I want to make the argument more specific.⁹⁴ As we grow and develop, we literally, not just “discursively” (that is, through language and cultural practices), construct our bodies, incorporating experience into our very flesh. To understand this claim, we must erode the distinctions between the physical and the social body.

Dualisms Denied

“A devil, a born devil, on whose nature nurture can never stick.” So Shakespeare’s Prospero denounces Caliban in *The Tempest*. Clearly, questions of nature and nurture have troubled European culture for some time. Euro-

American ways of understanding how the world works depend heavily on the use of dualisms—pairs of opposing concepts, objects, or belief systems. This book focuses especially on three of these: sex/gender, nature/nurture, and real/constructed. We usually employ dualisms in some form of hierarchical argument. Prospero complains that nature controls Caliban’s behavior and that his, Prospero’s, “pains humanely taken” (to civilize Caliban) are to no avail. Human nurture cannot conquer the devil’s nature. In the chapters that follow we will encounter relentless intellectual struggle over which element in any particular pair of dualisms should (or is believed to) dominate. But in virtually all cases, I argue that intellectual questions cannot be resolved nor social progress made by reverting to Prospero’s complaint. Instead, as I consider discrete moments in the creation of biological knowledge about human sexuality, I look to cut through the Gordian knot of dualistic thought. I propose to modify Halperin’s *bon mot* that “sexuality is not a somatic fact, it is a cultural effect,”⁹⁵ arguing instead that sexuality is a somatic fact *created by* a cultural effect. (See especially this book’s final chapter.)

Why worry about using dualisms to parse the world? I agree with the philosopher Val Plumwood, who argues that their use makes invisible the interdependencies of each pair. This relationship enables sets of pairs to map onto each other. Consider an extract of Plumwood’s list:

Reason	Nature
Male	Female
Mind	Body
Master	Slave
Freedom	Necessity (nature)
Human	Nature (nonhuman)
Civilized	Primitive
Production	Reproduction
Self	Other

In everyday use, the sets of associations on each side of the list often run together. “Culture,” Plumwood writes, accumulates these dualisms as a store of weapons “which can be mined, refined and redeployed. Old oppressions stored as dualisms facilitate and break the path for new ones.”⁹⁶ For this reason, even though my focus is on gender, I do not hesitate to point out occasions in which the constructs and ideology of race intersect with those of gender.

Ultimately, the sex/gender dualism limits feminist analysis. The term *gender*, placed in a dichotomy, necessarily excludes biology. As the feminist theorist Elizabeth Wilson writes: “Feminist critiques of the stomach or hormonal

structure . . . have been rendered unthinkable.”⁹⁷ (See chapters 6–8 herein for an attempt to remedy the hormone deficiency.) Such critiques remain unthinkable because of the real/constructed divide (sometimes formulated as a division between nature and culture), in which many map the knowledge of the real onto the domain of science (equating the constructed with the cultural). Dichotomous formulations from feminists and nonfeminists alike conspire to make a sociocultural analysis of the body seem impossible.

Some feminist theorists, especially during the last decade, have tried—with varying degrees of success—to create a nondualistic account of the body. Judith Butler, for example, tries to reclaim the material body for feminist thought. Why, she wonders, has the idea of materiality come to signify that which is irreducible, that which can support construction but cannot itself be constructed?⁹⁸ We have, Butler says (and I agree), to talk about the material body. There *are* hormones, genes, prostates, uteri, and other body parts and physiologies that we use to differentiate male from female, that become part of the ground from which varieties of sexual experience and desire emerge. Furthermore, variations in each of these aspects of physiology profoundly affect an individual’s experience of gender and sexuality. But every time we try to return to the body as something that exists prior to socialization, prior to discourse about male and female, Butler writes, “we discover that matter is fully sedimented with discourses on sex and sexuality that prefigure and constrain the uses to which that term can be put.”⁹⁹

Western notions of matter and bodily materiality, Butler argues, have been constructed through a “gendered matrix.” That classical philosophers associated femininity with materiality can be seen in the origins of the word itself. “Matter” derived from *mater* and *matrix*, referring to the womb and problems of reproduction. In both Greek and Latin, according to Butler, matter was not understood to be a blank slate awaiting the application of external meaning. “The matrix is a . . . formative principle which inaugurates and informs a development of some organism or object . . . for Aristotle, ‘matter is potentiality, form actuality.’ . . . In reproduction women are said to contribute the matter, men the form.”¹⁰⁰ As Butler notes, the title of her book, *Bodies That Matter*, is a well-thought-out pun. To be material is to speak about the process of materialization. And if viewpoints about sex and sexuality are already embedded in our philosophical concepts of how matter forms into bodies, the matter of bodies cannot form a neutral, pre-existing ground from which to understand the origins of sexual difference.¹⁰¹

Since matter already contains notions of gender and sexuality, it cannot be a neutral recourse on which to build “scientific” or “objective” theories of sexual development and differentiation. At the same time, we have to ac-

knowledge and use aspects of materiality “that pertain to the body.” “The domains of biology, anatomy, physiology, hormonal and chemical composition, illness, age, weight, metabolism, life and death” cannot “be denied.”¹⁰² The critical theorist Bernice Hausman concretizes this point in her discussion of surgical technologies available for creating male-to-female versus female-to-male transsexual bodies. “The differences,” she writes, “between vagina and penis are not merely ideological. Any attempt to engage and decode the semiotics of sex . . . must acknowledge that these physiological signifiers have functions in the real that will escape . . . their function in the symbolic system.”¹⁰³

To talk about human sexuality requires a notion of the material. Yet the idea of the material comes to us already tainted, containing within it pre-existing ideas about sexual difference. Butler suggests that we look at the body as a system that simultaneously produces and is produced by social meanings, just as any biological organism always results from the combined and simultaneous actions of nature and nurture.

Unlike Butler, the feminist philosopher Elizabeth Grosz allows some biological processes a status that pre-exists their meaning. She believes that biological instincts or drives provide a kind of raw material for the development of sexuality. But raw materials are never enough. They must be provided with a set of meanings, “a network of desires”¹⁰⁴ that organize the meanings and consciousness of the child’s bodily functions. This claim becomes clear if one follows the stories of so-called wild children raised without human constraints or the inculcation of meaning. Such children acquire neither language nor sexual drive. While their bodies provided the raw materials, without a human social setting the clay could not be molded into recognizable psychic form. Without human sociality, human sexuality cannot develop.¹⁰⁵ Grosz tries to understand how human sociality and meaning that clearly originate outside the body end up incorporated into its physiological demeanor and both unconscious and conscious behaviors.

Some concrete examples will help illustrate. A tiny gray-haired woman, well into her ninth decade, peers into the mirror at her wrinkled face. “Who is that woman?” she wonders. Her mind’s image of her body does not synchronize with the mirror’s reflection. Her daughter, now in her mid-fifties, tries to remember that unless she thinks about using her leg muscles instead of her knee joint, going up and down the stairs will be painful. (Eventually she will acquire a new kinesic habit and dispense with conscious thought about the matter.) Both women are readjusting the visual and kinesic components of their body image, formed on the basis of past information, but always a bit out of date with the current physical body.¹⁰⁶ How do such readjustments occur,

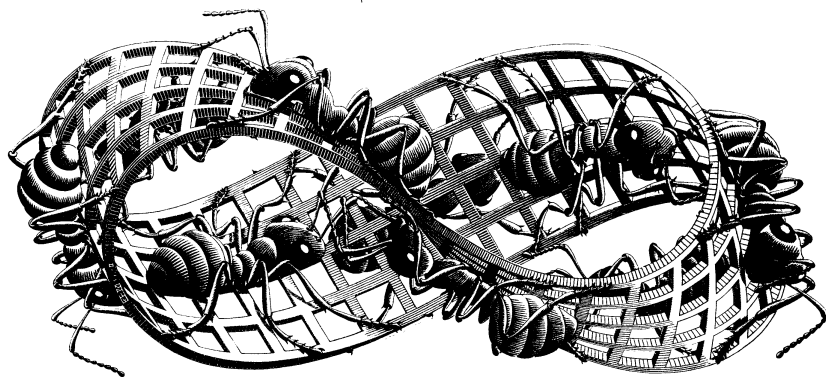


FIGURE 1.3: Möbius Strip II, by M. C. Escher. (© Cordon Art; reprinted with permission)

and how do our earliest body images form in the first place? Here we need the concept of the psyche, a place where two-way translations between the mind and the body take place—a United Nations, as it were, of bodies and experiences.¹⁰⁷

In *Volatile Bodies*, Elizabeth Grosz considers how the body and the mind come into being together. To facilitate her project, she invokes the image of a Möbius strip as a metaphor for the psyche. The Möbius strip is a topological puzzle (figure 1.3), a flat ribbon twisted once and then attached end to end to form a circular twisted surface. One can trace the surface, for example, by imagining an ant walking along it. At the beginning of the circular journey, the ant is clearly on the outside. But as it traverses the twisted ribbon, without ever lifting its legs from the plane, it ends up on the inside surface. Grosz proposes that we think of the body—the brain, muscles, sex organs, hormones, and more—as composing the inside of the Möbius strip. Culture and experience would constitute the outside surface. But, as the image suggests, the inside and outside are continuous and one can move from one to the other without ever lifting one's feet off the ground.

As Grosz recounts, psychoanalysts and phenomenologists describe the body in terms of feelings.¹⁰⁸ The mind translates physiology into an interior sense of self. Oral sexuality, for example, is a physical feeling that a child and later an adult translates into psychosexual meaning. This translation takes place on the inside of the Möbius surface. But as one traces the surface toward the outside, one begins to speak in terms of connections to other bodies and objects—things that are clearly not-self. Grosz writes, “Instead of describing the oral drive in terms of what it feels like . . . orality can be understood in

terms of what it does: creating linkages. The child's lips, for example, form connections . . . with the breast or bottle, possibly accompanied by the hand in conjunction with an ear, each system in perpetual motion and in mutual interrelation."¹⁰⁹

Continuing with the Möbius analogy, Grosz envisions that bodies create psyches by using the libido as a marker pen to trace a path from biological processes to an interior structure of desire. It falls to a different arena of scholarship to study the "outside" of the strip, a more obviously social surface marked by "pedagogical, juridical, medical, and economic texts, laws, and practices" in order to "carve out a social subject . . . capable of labor, or production and manipulation, a subject capable of acting as a subject."¹¹⁰ Thus Grosz also rejects a nature versus nurture model of human development. While acknowledging that we do not understand the range and limits of the body's pliability, she insists that we cannot merely "subtract the environment, culture, history" and end up with "nature or biology."¹¹¹

Beyond Dualisms

Grosz postulates innate drives that become organized by physical experience into somatic feelings, which translate into what we call emotions. Taking the innate at face value, however, still leaves us with an unexplained residue of nature.¹¹² Humans are biological and thus in some sense natural beings *and* social and in some sense artificial—or, if you will, constructed entities. Can we devise a way of seeing ourselves, as we develop from fertilization to old age, as simultaneously natural and unnatural? During the past decade an exciting vision has emerged that I have loosely grouped under the rubric of developmental systems theory, or DST.¹¹³ What do we gain by choosing DST as an analytic framework?

Developmental systems theorists deny that there are fundamentally two kinds of processes: one guided by genes, hormones, and brain cells (that is, nature), the other by the environment, experience, learning, or inchoate social forces (that is, nurture).¹¹⁴ The pioneer systems theorist, philosopher Susan Oyama promises that DST: "gives more clarity, more coherence, more consistency and a different way to interpret data; in addition it offers the means for synthesizing the concepts and methods . . . of groups that have been working at cross-purposes, or at least talking past each other for decades." Nevertheless, developmental systems theory is no magic bullet. Many will resist its insights because, as Oyama explains, "it gives less . . . guidance on fundamental truth" and "fewer conclusions about what is inherently desirable, healthy, natural or inevitable."¹¹⁵

How, specifically, can DST help us break away from dualistic thought processes? Consider an example described by systems theorist Peter Taylor, a goat born with no front legs. During its lifetime it managed to hop around on its hind limbs. An anatomist who studied the goat after it died found that it had an S-shaped spine (as do humans), “thickened bones, modified muscle insertions, and other correlates of moving on two legs.”¹¹⁶ This (and every goat’s) skeletal system developed as part of its manner of walking. Neither its genes nor its environment determined its anatomy. Only the ensemble had such power. Many developmental physiologists recognize this principle.¹¹⁷ As one biologist writes, “enstructuring occurs during the enactment of individual life histories.”¹¹⁸

A few years ago, when the neuroscientist Simon LeVay reported that the brain structures of gay and heterosexual men differed (and that this mirrored a more general sex difference between straight men and women), he became the center of a firestorm.¹¹⁹ Although an instant hero among many gay males, he was at odds with a rather mixed group. On the one hand, feminists such as myself disliked his unquestioning use of gender dichotomies, which have in the past never worked to further equality for women. On the other, members of the Christian right hated his work because they believe that homosexuality is a sin that individuals can choose to reject.¹²⁰ LeVay’s, and later geneticist Dean Hamer’s, work suggested to them that homosexuality was inborn or innate.¹²¹ The language of the public debate soon became polarized. Each side contrasted words such as *genetic*, *biological*, *inborn*, *innate*, and *unchanging* with *environmental*, *acquired*, *constructed*, and *choice*.¹²²

The ease with which such debates evoke the nature/nurture divide is a consequence of the poverty of a nonsystems approach.¹²³ Politically, the nature/nurture framework holds enormous dangers. Although some hope that a belief in the nature side of things will lead to greater tolerance, past history suggests that the opposite is also possible. Even the scientific architects of the nature argument recognize the dangers.¹²⁴ In an extraordinary passage in the pages of *Science*, Dean Hamer and his collaborators indicated their concern: “It would be fundamentally unethical to use such information to try to assess or alter a person’s current or future sexual orientation. Rather, scientists, educators, policy-makers and the public should work together to ensure that such research is used to benefit all members of society.”¹²⁵

The feminist psychologist and critical theorist Elisabeth Wilson uses the hubbub over LeVay’s work to make some important points about systems theory.¹²⁶ Many feminist, queer, and critical theorists work by deliberately displacing biology, hence opening the body to social and cultural shaping.¹²⁷ This, however, is the wrong move to make. Wilson writes: “What may be

politically and critically contentious in LeVay's hypothesis is not the conjunction neurology-sexuality per se, but the particular manner in which such a conjunction is enacted."¹²⁸ An effective political response, she continues, doesn't have to separate the study of sexuality from the neurosciences. Instead, Wilson, who wants us to develop a theory of mind and body—an account of psyche that joins libido to body—suggests that feminists incorporate into their worldview an account of how the brain works that is, broadly speaking, called connectionism.

The old-fashioned approach to understanding the brain was anatomical. Function could be located in particular parts of the brain. Ultimately function and anatomy were one. This idea underlies the corpus callosum debate (see chapter 5), for example, as well as the uproar over LeVay's work. Many scientists believe that a structural difference represents the brain location for measured behavioral differences. In contrast, connectionist models¹²⁹ argue that function emerges from the complexity and strength of many neural connections acting at once.¹³⁰ The system has some important characteristics: the responses are often nonlinear, the networks can be "trained" to respond in particular ways, the nature of the response is not easily predictable, and information is not located anywhere—rather, it is the net result of the many different connections and their differing strengths.¹³¹

The tenets of some connectionist theory provide interesting starting points for understanding human sexual development. Because connectionist networks, for example, are usually nonlinear, small changes can produce large effects. One implication for studying sexuality: we could easily be looking in the wrong places and on the wrong scale for aspects of the environment that shape human development.¹³² Furthermore, a single behavior may have many underlying causes, events that happen at different times in development. I suspect that our labels of homosexual, heterosexual, bisexual, and transgender are really not good categories at all, and are best understood only in terms of unique developmental events¹³³ affecting particular individuals. Thus, I agree with those connectionists who argue that "the developmental process itself lies at the heart of knowledge acquisition. Development is a process of emergence."¹³⁴

In most public and most scientific discussions, sex and nature are thought to be real, while gender and culture are seen as constructed.¹³⁵ But these are false dichotomies. I start, in chapters 2–4, with the most visible, exterior markers of gender—the genitalia—to illustrate how sex is, literally, constructed. Surgeons remove parts and use plastic to create "appropriate" genitalia for people born with body parts that are not easily identifiable as male or female. Physicians believe that their expertise enables them to "hear" nature

telling them the truth about what sex such patients ought to be. Alas, their truths come from the social arena and are reinforced, in part, by the medical tradition of rendering intersexual births invisible.

Our bodies, as well as the world we live in, are certainly made of materials. And we often use scientific investigation to understand the nature of those materials. But such scientific investigation involves a process of knowledge construction. I illustrate this in some detail in chapter 5, which moves us into the body's interior—the less visible anatomy of the brain. Here I focus on a single scientific controversy: Do men and women have differently shaped corpus callosums (a specific region of the brain)? In this chapter, I show how scientists construct arguments by choosing particular experimental approaches and tools. The entire shape of the debate is socially constrained, and the particular tools chosen to conduct the controversy (for example, a particular form of statistical analysis or using brains from cadavers rather than Magnetic Resonance Image brain scans) have their own historical and technical limitations.¹³⁶

Under appropriate circumstances, however, even the corpus callosum is visible to the naked eye. What happens, then, when we delve even more deeply—into the body's invisible chemistry? In chapters 6 and 7, I show how in the period from 1900 to 1940 scientists carved up nature in a particular fashion, creating the category of sex hormones. The hormones themselves became markers of sexual difference. Now, the finding of a sex hormone or its receptor in any part of the body (for example, on bone cells) renders that previously gender-neutral body part sexual. But if one looks, as I do, historically, one can see that steroid hormones need not have been divided into sex and nonsex categories.¹³⁷ They could, for example, have been considered to be growth hormones affecting a wide swath of tissues, including reproductive organs.

Scientists now agree about the chemical structure of the steroid molecules they labeled as sex hormones, even though they are not visible to the naked eye. In chapter 8, I focus in part on how scientists used the newly minted concept of the sex hormone to deepen understanding of genital development in rodents, and in part on their application of knowledge about sex hormones to something even less tangible than body chemistry: sex-related behavior. But, to paraphrase the Bard, the course of true science never did run smooth. Experiments and models depicting the role of hormones in the development of sexual behaviors on rodents formed an eerie parallel with cultural debates about the roles and abilities of men and women. It seems hard to avoid the view that our very real, scientific understandings of hormones, brain develop-

ment, and sexual behavior are, nevertheless, constructed in and bear the marks of specific historical and social contexts.

This book, then, examines the construction of sexuality, starting with structures visible on the body's exterior surface and ending with behaviors and motivations—that is with activities and forces that are patently invisible—inferred only from their outcome, but presumed to be located deep within the body's interior.¹³⁸ But behaviors are generally social activities, expressed in interaction with distinctly separate objects and beings. Thus, as we move from genitalia on the outside to the invisible psyche, we find ourselves suddenly walking along the surface of a Möbius strip back toward, and beyond, the body's exterior. In the book's final chapter, I outline research approaches that can potentially show us how we move from outside to inside and back out again, without ever lifting our feet from the strip's surface.

“THAT SEXE WHICH PREVAILETH”



The Sexual Continuum

IN 1843 LEVI SUYDAM, A TWENTY-THREE-YEAR-OLD RESIDENT OF SALISBURY, Connecticut, asked the town’s board of selectmen to allow him to vote as a Whig in a hotly contested local election. The request raised a flurry of objections from the opposition party, for a reason that must be rare in the annals of American democracy: it was said that Suydam was “more female than male,” and thus (since only men had the right to vote) should not be allowed to cast a ballot. The selectmen brought in a physician, one Dr. William Barry, to examine Suydam and settle the matter. Presumably, upon encountering a phallus and testicles, the good doctor declared the prospective voter male. With Suydam safely in their column, the Whigs won the election by a majority of one.

A few days later, however, Barry discovered that Suydam menstruated regularly and had a vaginal opening. Suydam had the narrow shoulders and broad hips characteristic of a female build, but occasionally “he” felt physical attractions to the “opposite” sex (by which “he” meant women). Furthermore, “his feminine propensities, such as fondness for gay colors, for pieces of calico, comparing and placing them together and an aversion for bodily labor, and an inability to perform the same, were remarked by many.”¹ (Note that this nineteenth-century doctor did not distinguish between “sex” and “gender.” Thus he considered a fondness for piecing together swatches of calico just as telling as anatomy and physiology.) No one has yet discovered whether Suydam lost the right to vote.² Whatever the outcome, the story conveys both the political weight our culture places on ascertaining a person’s correct “sex” and the deep confusion that arises when it can’t be easily determined.

European and American culture is deeply devoted to the idea that there are only two sexes. Even our language refuses other possibilities; thus to write

about Levi Suydam (and elsewhere in this book) I have had to invent conventions—s/he and h/er to denote individuals who are clearly neither/both male and female or who are, perhaps, both at once. Nor is the linguistic convenience an idle fancy. Whether one falls into the category of man or woman matters in concrete ways. For Suydam—and still today for women in some parts of the world—it meant the right to vote. It might mean being subject to the military draft and to various laws concerning the family and marriage. In many parts of the United States, for example, two individuals legally registered as men cannot have sexual relations without breaking antisodomy laws.³

But if the state and legal system has an interest in maintaining only two sexes, our collective biological bodies do not. While male and female stand on the extreme ends of a biological continuum, there are many other bodies, bodies such as Suydam’s, that evidently mix together anatomical components conventionally attributed to both males and females. The implications of my argument for a sexual continuum are profound. If nature really offers us more than two sexes, then it follows that our current notions of masculinity and femininity are cultural conceits. Reconceptualizing the category of “sex” challenges cherished aspects of European and American social organization.

Indeed, we have begun to insist on the male-female dichotomy at increasingly early ages, making the two-sex system more deeply a part of how we imagine human life and giving it the appearance of being both inborn and natural. Nowadays, months before the child leaves the comfort of the womb, amniocentesis and ultrasound identify a fetus’s sex. Parents can decorate the baby’s room in gender-appropriate style, sports wallpaper—in blue—for the little boy, flowered designs—in pink—for the little girl. Researchers have nearly completed development of technology that can choose the sex of a child at the moment of fertilization.⁴ Moreover, modern surgical techniques help maintain the two-sex system. Today children who are born “either/or—neither/both”⁵—a fairly common phenomenon—usually disappear from view because doctors “correct” them right away with surgery. In the past, however, intersexuals (or hermaphrodites, as they were called until recently)* were culturally acknowledged (see figure 2.1).

How did the birth and acknowledged presence of hermaphrodites shape ideas about gender in the past? How did, modern medical treatments of intersexuality develop? How has a political movement of intersexuals and their supporters emerged to push for increased openness to more fluid sexual iden-

* Members of the present-day Intersexual Movement eschew the use of the word *hermaphrodite*. I will try to use it when it is historically proper. Since the word *intersexual* is a modern one, I will not use it when writing about the past.



FIGURE 2.1: Sleeping hermaphrodite, Roman second century B.C.
(Erich Lessing, from Art Resource; reprinted with permission)

titles, and how successful have their challenges been? What follows is a most literal tale of social construction—the story of the emergence of strict surgical enforcement of a two-party system of sex and the possibility, as we move into the twenty-first century, of the evolution of a multiparty arrangement.

Hermaphrodite History

Intersexuality is old news. The word *hermaphrodite* comes from a Greek term that combined the names Hermes (son of Zeus and variously known as the messenger of the gods, patron of music, controller of dreams, and protector of livestock) and Aphrodite (the Greek goddess of sexual love and beauty). There are at least two Greek myths about the origins of the first hermaphrodite. In one, Aphrodite and Hermes produce a child so thoroughly endowed with the attributes of each parent that, unable to decide its sex for sure, they name it Hermaphroditos. In the other, their child is an astonishingly beautiful male with whom a water nymph falls in love. Overcome by desire, she so deeply intertwines her body with his that they become joined as one.

If the figure of the hermaphrodite has seemed odd enough to prompt speculation about its peculiar origins, it has also struck some as the embodiment of a human past that predated dualistic sexual division. Early biblical interpreters thought that Adam began his existence as a hermaphrodite and that he divided

into two individuals, male and female, only after falling from grace. Plato wrote that there were originally three sexes—male, female, and hermaphrodite—but that the third sex became lost over time.⁶

Different cultures have confronted real-life intersexuals in different ways. Jewish religious texts such as the Talmud and the Tosefta list extensive regulations for people of mixed sex, regulating modes of inheritance and of social conduct. The Tosefta, for example, forbids hermaphrodites from inheriting their fathers' estates (like daughters), from secluding themselves with women (like sons), and from shaving (like men). When they menstruate they must be isolated from men (like women); they are disqualified from serving as witnesses or as priests (like women); but the laws of pederasty apply to them. While Judaic law provided a means for integrating hermaphrodites into mainstream culture, Romans were not so kind. In Romulus's time intersexes were believed to be a portent of a crisis of the state and were often killed. Later, however, in Pliny's era, hermaphrodites became eligible for marriage.⁷

In tracking the history of medical analyses of intersexuality, one learns more generally how the social history of gender itself has varied, first in Europe and later in America, which inherited European medical traditions. In the process we can learn that there is nothing natural or inevitable about current medical treatment of intersexuals. Early medical practitioners, who understood sex and gender to fall along a continuum and not into the discrete categories we use today, were not fazed by hermaphrodites. Sexual difference, they thought, involved quantitative variation. Women were cool, men hot, masculine women or feminine men warm. Moreover, human variation did not, physicians of this era believed, stop at the number three. Parents could produce boys with different degrees of manliness and girls with varying amounts of womanliness.

In the premodern era, several views of the biology of intersexuality competed. Aristotle (384–322 B.C.), for example, categorized hermaphrodites as a type of twin. He believed that complete twinning occurred when the mother contributed enough matter at conception to create two entire embryos. In the case of intersexuals, there was more than enough matter to create one but not quite enough for two. The excess matter, he thought, became extra genitalia. Aristotle did not believe that genitalia defined the sex of the baby, however. Rather, the heat of the heart determined maleness or femaleness. He argued that underneath their confusing anatomy, hermaphrodites truly belonged to one of only two possible sexes. The highly influential Galen, in the first century A.D., disagreed, arguing that hermaphrodites belonged to an intermediate sex. He believed that sex emerged from the opposition of male and female principles in the maternal and paternal seeds in combination

with interactions between the left and right sides of the uterus. From the overlaying of varying degrees of dominance between male and female seed on top of the several potential positions of the fetus in the womb, a grid containing from three to seven cells emerged. Depending upon where on the grid an embryo fell, it could range from entirely male, through various intermediate states, to entirely female. Thus, thinkers in the Galenic tradition believed no stable biological divide separated male from female.⁸

Physicians in the Middle Ages continued to hold to the classical theory of a sexual continuum, even while they increasingly argued for sharper divisions of sexual variation. Medieval medical texts espoused the classical idea that the relative heat on the right side of the uterus produced males, the cooler fetus developing on the left side of the womb became a female, and fetuses developing more toward the middle became manly women or womanly men.⁹ The notion of a continuum of heat coexisted with the idea that the uterus consisted of seven discrete chambers. The three cells to the right housed males, the three to the left females, while the central chamber produced hermaphrodites.¹⁰

A willingness to find a place for hermaphrodites in scientific theory, however, did not translate into social acceptance. Historically, hermaphrodites were often regarded as rebellious, disruptive, or even fraudulent. Hildegard of Bingen, a famous German abbess and visionary mystic (1098–1179) condemned any confusion of male and female identity. As the historian Joan Cadden has noted, Hildegard chose to place her denunciation “between an assertion that women should not say mass and a warning against sexual perversions. . . . A disorder of either sex or sex roles is a disorder in the social fabric . . . and in the religious order.”¹¹ Such stern disapproval was unusual for her time. Despite widespread uncertainty about their proper social roles, disapproval of hermaphrodites remained relatively mild. Medieval medical and scientific texts complained of negative personality traits—lustfulness in the masculine femalelike hermaphrodite and deceitfulness in the feminine malelike individual,¹² but outright condemnation seems to have been infrequent.

Biologists and physicians of that era did not have the social prestige and authority of today’s professionals and were not the only ones in a position to define and regulate the hermaphrodite. In Renaissance Europe, scientific and medical texts often propounded contradictory theories about the production of hermaphrodites. These theories could not fix gender as something real and stable within the body. Rather, physicians’ stories competed both with medicine and with those elaborated by the Church, the legal profession, and politicians. To further complicate matters, different European nations had different ideas about the origins, dangers, civil rights, and duties of hermaphrodites.¹³

For example, in France, in 1601, the case of Marie/Marin le Marcis engendered great controversy. “Marie” had lived as a woman for twenty-one years before deciding to put on men’s clothing and registering to marry the woman with whom s/he cohabited. “Marin” was arrested, and after having gone through harrowing sentences—first being condemned to burn at the stake, then having the penalty “reduced” to death by strangling (and we thought *our* death row was bad!!)—s/he eventually was set free on the condition that s/he wear women’s clothing until the age of twenty-five. Under French law Marie/Marin had committed two crimes: sodomy and cross-dressing.

English law, in contrast, did not specifically forbid cross-gender dressing. But it did look askance at those who donned the attire of a social class to which they did not belong. In a 1746 English case, Mary Hamilton married another woman after assuming the name “Dr. Charles Hamilton.” The legal authorities were sure she had done something wrong, but they couldn’t quite put their finger on what it was. Eventually they convicted her of vagrancy, reasoning that she was an unusually ballsy but nonetheless common cheat.¹⁴

During the Renaissance, there was no central clearinghouse for the handling of hermaphrodites. While in some cases physicians or the state intervened, in others the Church took the lead. For instance, in Piedra, Italy, in 1601, the same year of Marie/Marin’s arrest, a young soldier named Daniel Burghammer shocked his regiment when he gave birth to a healthy baby girl. After his alarmed wife called in his army captain, he confessed to being half male and half female. Christened as a male, he had served as a soldier for seven years while also a practicing blacksmith. The baby’s father, Burghammer said, was a Spanish soldier. Uncertain of what to do, the captain called in Church authorities, who decided to go ahead and christen the baby, whom they named Elizabeth. After she was weaned—Burghammer nursed the child with his female breast—several towns competed for the right to adopt her. The Church declared the child’s birth a miracle, but granted Burghammer’s wife a divorce, suggesting that it found Burghammer’s ability to give birth incompatible with role of husband.¹⁵

The stories of Marie/Marin, Mary Hamilton, and Daniel Burghammer illustrate a simple point. Different countries and different legal and religious systems viewed intersexuality in different ways. The Italians seemed relatively nonplussed by the blurring of gender borders, the French rigidly regulated it, while the English, although finding it distasteful, worried more about class transgressions. Nevertheless, all over Europe the sharp distinction between male and female was at the core of systems of law and politics. The rights of inheritance, forms of judicial punishment, and the right to vote and partici-

pate in the political system were all determined in part by sex. And those who fell in between? Legal experts acknowledged that hermaphrodites existed but insisted they position themselves within this gendered system. Sir Edward Coke, famed jurist of early modern England wrote “an Hermaphrodite may purchase according to that sexe which prevaieth.”¹⁶ Similarly, in the first half of the seventeenth century, French hermaphrodites could serve as witnesses in the court and even marry, providing that they did so in the role assigned to them by “the sex which dominates their personality.”¹⁷

The individual him/herself shared with medical and legal experts the right to decide which sex prevailed but, once having made a choice, was expected to stick with it. The penalty for renegeing could be severe. At stake was the maintenance of the social order and the rights of man (meant literally). Thus, although it was clear that some people straddled the male-female divide, the social and legal structures remained fixed around a two-sex system.¹⁸

The Making of the Modern Intersexual

As biology emerged as an organized discipline during the late eighteenth and early nineteenth centuries, it gradually acquired greater authority over the disposition of ambiguous bodies.¹⁹ Nineteenth-century scientists developed a clear sense of the statistical aspects of natural variation,²⁰ but along with such knowledge came the authority to declare that certain bodies were abnormal and in need of correction.²¹ The biologist Isidore Geoffroy Saint-Hilaire played a particularly central role in recasting scientific ideas about sexual difference. He founded a new science, which he dubbed *teratology*, for the study and classification of unusual births. Saint-Hilaire and other like-minded biologists set out to study all anatomical anomalies, and they established two important principles that began to guide medical approaches to natural variation. First, Saint-Hilaire argued that “Nature is one whole”²²—that is, that even unusual or what had been called “monstrous” births were still part of nature. Second, drawing on newly developed statistical concepts, he proclaimed that hermaphrodites and other birth anomalies resulted from abnormal embryonic development. To understand their genesis, he argued, one must understand normal development. Studying abnormal variations could in turn illuminate normal processes. Saint-Hilaire believed that unlocking the origins of hermaphrodites would lead to an understanding of the development of sexual difference more generally. This scientific transposition of the old mythic fascination with hermaphrodites has remained, to this day, a guiding principle of scientific investigation into the biological underpinnings of sex/

gender roles and behaviors of nonintersexuals. (See chapters 3 and 4 for a discussion of the modern literature.)

Saint-Hilaire's writings were not only of importance to the scientific community, they served a new social function as well. Whereas in previous centuries, unusual bodies were treated as unnatural and freakish, the new field of teratology offered a natural explanation for the birth of people with extraordinary bodies.²³ At the same time, however, it redefined such bodies as pathological, as unhealthy conditions to be cured using increased medical knowledge. Ironically, then, scientific understanding was used as a tool to obliterate precisely the wonders it illuminated. By the middle of the twentieth century, medical technology had “advanced” to a point where it could make bodies that had once been objects of awe and astonishment disappear from view, all in the name of “correcting nature's mistakes.”²⁴

The hermaphrodite vanishing act relied heavily on the standard scientific technique of classification.²⁵ Saint-Hilaire divided the body into “sex segments,” three on the left and three on the right. He named these zones the “profound portion,” which contained ovaries, testicles, or related structures; the “middle portion,” which contained internal sex structures such as the uterus and seminal vesicles; and the “external portion,” which included the external genitalia.²⁶ If all six segments were wholly male, he decreed, so too was the body. If all six were female, the body was clearly female. But when a mixture of male and female appeared in any of the six zones, a hermaphrodite resulted. Thus, Saint-Hilaire's system continued to recognize the legitimacy of sexual variety but subdivided hermaphrodites into different types, laying the groundwork for future scientists to establish a difference between “true” and “false” hermaphrodites. Since the “true” hermaphrodites were very rare, eventually a classification system arose that made intersexuality virtually invisible.

In the late 1830s, a physician named James Young Simpson, building on Saint-Hilaire's approach, proposed to classify hermaphrodites as either “spurious” or “true.” In spurious hermaphrodites, he wrote, “the genital organs and general sexual configuration of one sex approach, from imperfect or abnormal development, to those of the opposite,” while in true hermaphrodites “there actually coexist upon the body of the same individual more or fewer of the genital organs.”²⁷ In Simpson's view, “genital organs” included not only ovaries or testes (the gonads) but also structures such as the uterus or seminal vesicles. Thus, a true hermaphrodite might have testes and a uterus, or ovaries and seminal vesicles.

Simpson's theory presaged what the historian Alice Dreger has dubbed the Age of Gonads. The honor of offering definitive powers to the gonads fell to a

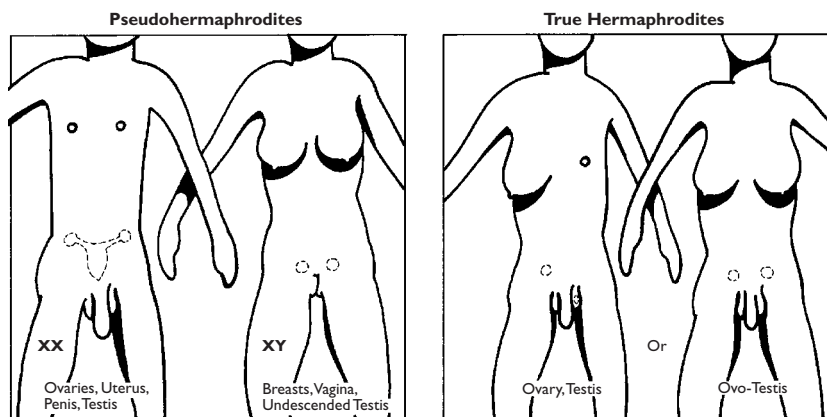


FIGURE 2.2: “Pseudo-hermaphroditism” have either ovaries or testes combined with the “opposite” genitalia. “True hermaphroditism” have an ovary and a testis, or a combined gonad, called an ovo-testis.

(Source: Alyce Santoro, for the author)

German physician named Theodor Albrecht Klebs, who published his ideas in 1876. Like Simpson, Klebs contrasted “true” with what he called “pseudo”-hermaphroditism. He restricted the term *true hermaphrodite* to someone who had both ovarian and testicular tissue in h/her body. All others with mixed anatomies—persons with both a penis and ovaries, or a uterus and a mustache, or testes and a vagina—no longer, in Klebs’s system, qualified as true hermaphroditism. But if they were not hermaphroditism, what were they? Klebs believed that under each of these confusing surfaces lurked a body either truly male or truly female. Gonads, he insisted, were the sole defining factor in biological sex. A body with two ovaries, no matter how many masculine features it might have, was female. No matter if a pair of testes were nonfunctional and the person possessing them had a vagina and breast, testes made a body male. The net result of this reasoning, as Dreger has noted, was that “significantly fewer people counted as ‘truly’ both male and female.”²⁸ Medical science was working its magic: hermaphroditism were beginning to disappear.

Once the gonads became the decisive factor (figure 2.2), it required more than common sense to identify an individual’s true sex. The tools of science—in the form of a microscope and new methods of preparing tissue for microscopic examination—became essential.²⁹ Rapidly, images of the hermaphrodite’s body disappeared from medical journals, replaced by abstract photographs of thinly sliced and carefully colored bits of gonadal tissue. Moreover,

as Alice Dreger points out, the primitive state of surgical techniques, especially the lack of anesthesia and antisepsis, at the end of the nineteenth century meant that doctors could obtain gonadal tissue samples only after death or castration: “Small in number, dead, impotent—what a sorry lot the true hermaphrodites had become!”³⁰ People of mixed sex all but disappeared, not because they had become rarer, but because scientific methods classified them out of existence.

At the turn of the century (1896, to be exact), the British physicians George F. Blackler and William P. Lawrence wrote a paper examining earlier claims of true hermaphroditism. They found that only three out of twenty-eight previously published case studies complied with the new standards. In Orwellian fashion, they cleansed past medical records of accounts of hermaphroditism, claiming they did not meet modern scientific standards,³¹ while few new cases met the strict criterion of microscopic verification of the presence of both male and female gonadal tissue.

Arguing About Sex and Gender

Under the mantle of scientific advancement, the ideological work of science was imperceptible to turn-of-the-century scientists, just as the ideological work of requiring Polymerase Chain Reaction Sex Tests of women athletes is, apparently, to the I.O.C. (See chapter 1.) Nineteenth-century theories of intersexuality—the classification systems of Saint-Hilaire, Simpson, Klebs, Blackler, and Lawrence—fit into a much broader group of biological ideas about difference. Scientists and medical men insisted that the bodies of males and females, of whites and people of color, Jews and Gentiles, and middle-class and laboring men differed deeply. In an era that argued politically for individual rights on the basis of human equality, scientists defined some bodies as better and more deserving of rights than others.

If this seems paradoxical, from another point of view it makes good sense. Political theories that declared that “all men are created equal” threatened to do more than provide justification for colonies to overthrow monarchies and establish independent republics. They threatened to undermine the logic behind fundamental social and economic institutions such as marriage, slavery, or the limiting of the right to vote to white men with property. Not surprisingly, then, the science of physical difference was often invoked to invalidate claims for social and political emancipation.³²

In the nineteenth century, for example, women active in the movement to abolish slavery in the United States, soon began to insist on their right to speak in public,³³ and by mid-century women in both the United States and England

were demanding better educational opportunities and economic rights and the right to vote. Their actions met fierce resistance from scientific experts.³⁴ Some doctors argued that permitting women to obtain college degrees would ruin their health, leading to sterility and ultimately the degeneration of the (white, middle-class) human race. Educated women angrily organized counterattacks and slowly gained the right to advanced education and the vote.³⁵

Such social struggles had profound implications for the scientific categorization of intersexuality. More than ever, politics necessitated two and only two sexes. The issue had gone beyond particular legal rights such as the right to vote. What if, while thinking she was a man, a woman engaged in some activity women were thought to be incapable of doing? Suppose she did well at it? What would happen to the idea that women's natural incapacities dictated social inequity? As the battles for social equality between the sexes heated up in the early twentieth century, physicians developed stricter and more exclusive definitions of hermaphroditism. The more social radicals blasted away at the separations between masculine and feminine spheres, the more physicians insisted on the absolute division between male and female.

Intersexuals Under Medical Surveillance

Until the early nineteenth century, the primary arbiters of intersexual status had been lawyers and judges, who, although they might consult doctors or priests on particular cases, generally followed their own understanding of sexual difference. By the dawn of the twentieth century, physicians were recognized as the chief regulators of sexual intermediacy.³⁶ Although the legal standard—that there were but two sexes and that a hermaphrodite had to identify with the sex prevailing in h/her body—remained, by the 1930s medical practitioners had developed a new angle: the surgical and hormonal suppression of intersexuality. The Age of Gonads gave way to the even less flexible Age of Conversion, in which medical practitioners found it imperative to catch mixed-sex people at birth and convert them, by any means necessary, to either male or female (figure 2.3).

But patients, troubling and troublesome patients, continued to place themselves squarely in the path of such oversimplification. Even during the Age of Gonads, medical men sometimes based their assessment of sexual identity on the overall shape of the body and the inclination of the patient—the gonads be damned. In 1915, the British physician William Blair Bell publicly suggested that sometimes the body was too mixed up to let the gonads alone dictate treatment. The new technologies of anesthesia and asepsis made it possible for small tissue samples (biopsies) to be taken from the gonads of

MANAGING INTERSEXUALITY- AN HISTORICAL PERSPECTIVE

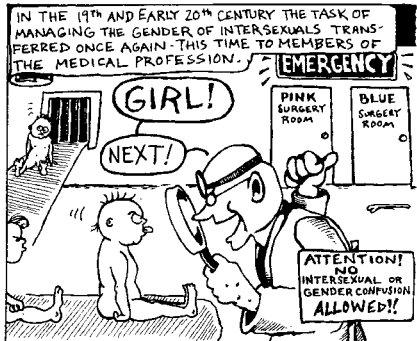
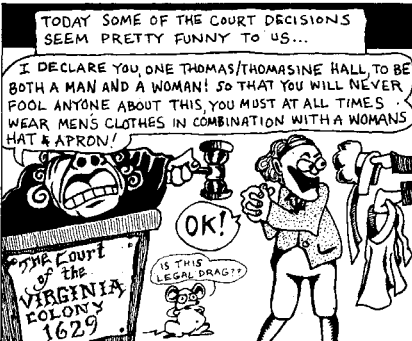
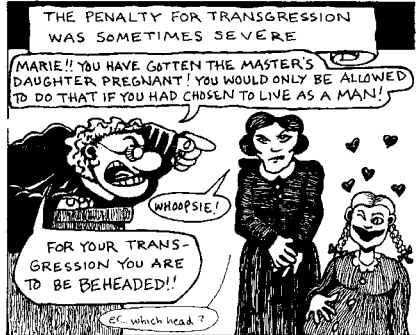
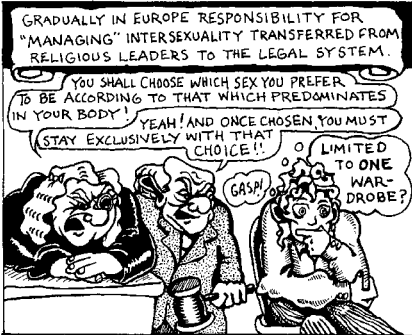
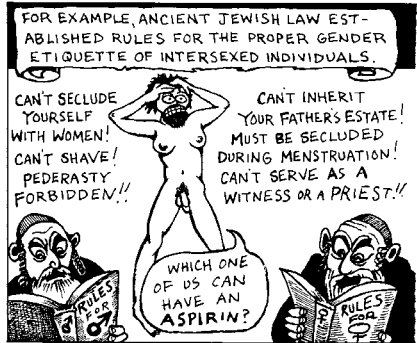


FIGURE 2.3: A cartoon history of intersexuality. (Source: Diane DiMassa, for the author)

living patients. Bell encountered a patient who had a mixture of external traits—a mustache, breasts, an elongated clitoris, a deep voice, and no menstrual period—and whose biopsy revealed that the gonad was an ovo-testis (a mixture of egg-producing and sperm-producing tissues).

Faced with a living and breathing true hermaphrodite Bell reverted to the older legal approach, writing that “predominating feminine characteristics have decided the sex adopted.” He emphasized that one need not rely wholly

on the gonads to decide which sex a patient must choose, but that “the possession of a [single] sex is a necessity of our social order, for hermaphrodites as well as for normal subjects.”³⁷ Bell did not abandon, however, the concepts of true and pseudo-hermaphroditism. Indeed, most physicians practicing today take this distinction for granted. But faced with the insistent complexity of actual bodies and personalities, Bell urged that each case be dealt with flexibly, taking into account the many different signs presented by the body and behaviors of the intersexual patient.

But this returned doctors to an old problem: Which signs were to count? Consider a case reported in 1924 by Hugh Hampton Young, “the Father of American Urology.”³⁸ Young operated on a young man with a malformed penis,³⁹ an undescended testis, and a painful mass in the groin. The mass turned out to be an ovary connected to an underdeveloped uterus and oviducts. Young pondered the problem:

A normal-looking young man with masculine instincts [athletic, heterosexual] was found to have a . . . functioning ovary in the left groin. What was the character of the scrotal sac on the right side? If these were also undoubtedly female, should they be allowed to remain outside in the scrotum? If a male, should the patient be allowed to continue life with a functioning ovary and tube in the abdomen on the left side? If the organs of either side should be extirpated, which should they be?⁴⁰

The young man turned out to have a testis, and Young snagged the ovary. As his experience grew, Young increasingly based his judgment calls on his patients’ psychological and social situations, using sophisticated understandings of the body more as a guide to the range of physical possibilities than as a necessary indicator of sex.

In 1937, Young, by then a professor of urology at Johns Hopkins University, published *Genital Abnormalities, Hermaphroditism and Related Adrenal Diseases*, a book remarkable for its erudition, scientific insight, and open-mindedness. In it he further systematized the classification of intersexes (maintaining Blackler and Lawrence’s definition of true hermaphroditism) and drew together a wealth of carefully documented case histories, both his own and others’, in order to demonstrate and study the medical treatment of these “accidents of birth.” He did not judge the people he described, several of whom lived as “practicing hermaphrodites”—that is, they had sexual experiences as both men and women.⁴¹ Nor did he attempt to coerce any of them into treatment.

One of Young’s cases involved a hermaphrodite named Emma who grew

up as a female. With both a large clitoris (one or two inches in length) and a vagina, s/he could have “normal” heterosexual sex with both men and women. As a teenager s/he had sex with a number of girls to whom she was deeply attracted, but at age nineteen s/he married a man with whom s/he experienced little sexual pleasure (although, according to Emma, he didn’t have any complaints). During this and subsequent marriages, Emma kept girlfriends on the side, frequently having pleasurable sex with them. Young described h/her as appearing “to be quite content and even happy.” In conversation, Dr. Young elicited Emma’s occasional wish to be a man. Although he assured her that it would be a relatively simple matter, s/he replied, “Would you have to remove that vagina? I don’t know about that because that’s my meal ticket. If you did that I would have to quit my husband and go to work, so I think I’ll keep it and stay as I am. My husband supports me well, and even though I don’t have any sexual pleasure with him, I do have lots with my girlfriend.” Without further comment or evidence of disappointment, Young proceeded to the next “interesting example of another practicing hermaphrodite.”⁴²

His case summary mentions nothing about financial motivations, saying only that Emma refused a sex fix because she “dreaded necessary operations,”⁴³ but Emma was not alone in allowing economic and social considerations to influence her choice of sex. Usually this meant that young hermaphrodites, when offered some choice, opted to become male. Consider the case of Margaret, born in 1915 and raised as a girl until the age of 14. When her voice began to deepen into a man’s, and her malformed penis grew and began to take on adult functions, Margaret demanded permission to live as a man. With the help of psychologists (who later published a report on the case) and a change of address, he abandoned his “ultrafeminine” attire of a “green satin dress with flared skirt, red velvet hat with rhinestone trimming, slippers with bows, hair bobbed with ends brought down over his cheeks.” He became, instead, a short-haired, baseball- and football-playing teenager whom his new classmates called Big James. James had his own thoughts about the advantages of being a man. He told his half-sister: “It is easier to be a man. You get more money (wages) and you don’t have to be married. If you’re a girl and you don’t get married people make fun of you.”⁴⁴

Although Dr. Young illuminated the subject of intersexuality with a great deal of wisdom and consideration for his patients, his work was part of the process that led both to a new invisibility and a harshly rigid approach to the treatment of intersexual bodies. In addition to being a thoughtful collection of case studies, Young’s book is an extended treatise on the most modern methods—both surgical and hormonal—of treating those who sought help.

Although less judgmental and controlling of patients and their parents than his successors, he nevertheless supplied the next generation of physicians with the scientific and technical bedrock on which they based their practices.

As was true in the nineteenth century, increased knowledge of the biological origins of sexual complexity facilitated the elimination of their signs. Deepening understandings of the physiological bases of intersexuality combined with improvements in surgical technology, especially since 1950, began to enable physicians to catch most intersexuals at the moment of birth.⁴⁵ The motive for their conversion was genuinely humanitarian: a wish to enable individuals to fit in and to function both physically and psychologically as healthy human beings. But behind the wish lay unexamined assumptions: first, that there should be only two sexes; second, that only heterosexuality was normal; and third, that particular gender roles defined the psychologically healthy man and woman.⁴⁶ These same assumptions continue to provide the rationale for the modern “medical management” of intersexual births.