As the doctors grappled with competing definitions of sex and opposing interpretations of crossgender identification, they also opened a dialogue on the contested sources of what we now call gender. For decades sexologists had drawn a distinction between the sex of the mind and the sex of the body. In the 1860s Karl Heinrich Ulrichs, a German lawyer who fought for homosexual rights, formulated his influential concept of a female soul in a male body, expressed in Latin as *anima muliebris virili corpore inclusa*. For Ulrichs, the sex of the soul or psyche, which he envisioned as inborn, explained his own erotic desire for men. "Nature," he wrote, "developed the *physical male* germ in us, yet *mentally,* the *feminine* one." In the late nineteenth and early twentieth centuries, a number of sexologists also distinguished physical sex from mental sex. They used mental sex to explain a variety of same-sex sexual attractions, crossgender behaviors, and crossgender identifications.[27]

As the medical literature on transsexuals emerged, the doctors and scientists involved drew, as Ulrichs had, a distinction between the sex in the mind, as seen in the sense of self, and the sex in the body, as gener-

ally evidenced in the genitals. Cauldwell referred to individuals who were "physically of one sex and apparently psychologically of the opposite sex." Hamburger and his colleagues wrote of a "female personality in a male body" and the "feeling of being a woman." Benjamin borrowed Ulrichs' formulation of "a female 'soul' . . . in [a] male body."[28] Whether they stressed psychological or biological origins, the scientists pointed to and lamented a disjuncture between the sense of self and the visible body. The sex of the visible body, they agreed, should match the sense of self. It was the doctors' goal, if at all possible, to coordinate the body and the mind. The question remained, though, whether they should attempt to change the sense of self or alter the body.

By the 1940s various doctors and scientists used the term *psychological sex* to refer to the sense of being a man or being a woman and to distinguish it from biological sex. In the 1930s and 1940s, much of the research on psychological sex focused on people with visible intersexed conditions. In accord with the scientific thought of the day, doctors assumed they should "correct" ambiguous genitalia. They agreed that surgical methods should be employed to remove the ambiguity, to fit the person as much as possible into the physical category of either female or male. But which sex should the doctors choose? If a person had ambiguous genitalia, should doctors attempt to transform her or him surgically into a woman or a man? At midcentury the medical authorities often advocated choosing "the predominant genetic sex" when surgically altering infants, but for adults they increasingly gave primacy to psychological sex. The sense of self, they said, did not spring automatically from biological sex, and in adults it seemed to be largely immutable. In fact attempts to change the psychological sex of adults "to correspond with the genetic sex" often led to "severe mental conflicts." They argued, as a 1952 summary stated, that "adult patients are usually better adjusted and happier if the genitalia are reconstructed in keeping with their psychological sex, disregarding completely the genetic sex."[29] In other words, the mind, not the chromosomes, should determine the sex.

From early on, this vision of immutable psychological sex appeared in the literature on transsexuality. In an early example published in 1946, Michael Dillon, then a British medical student, directly ad-

dressed the issue. Although he did not say so in his book, Dillon was himself a transsexual in the process of transition from female to male. For Dillon, transsexuality—which in the era before the word existed he generally described as a form of homosexuality—had a physical basis. He speculated that feminine men and masculine women had an endocrine disorder, probably inherited. For such people, who had the "psyche" or "personality" of the other sex, Dillon advocated surgery. "Surely," he wrote, "where the mind cannot be made to fit the body, the body should be made to fit, approximately, at any rate, to the mind." Dillon drew in part on the medical literature on intersexuality. "In individuals where the presence of mixed tissue or mixed organs is obvious it is the psychological build that should be consulted and not the predominance of any particular physical structure."[30] The same criterion, he implied, should apply to transsexuals. In determining how one led one's life, the psychological sex should predominate. Doctors could and should alter the body to match the mind.

In Denmark, Hamburger and his co-workers, and in the United States, Harry Benjamin also wrote of transforming the sex of the body to correspond with the sex of the mind. They strove, as they described it, toward "harmony" between the mind and the body. In the case of Christine Jorgensen, Hamburger and his colleagues wrote: "by hormonal feminization and operative demasculinization the patient's soma harmonized with the pronounced feminine psyche." Similarly, Harry Benjamin aimed for "harmony" when he endorsed medical intervention. "If it is evident," he wrote, "that the psyche cannot be brought into sufficient harmony with the soma, then and only then is it essential to consider the reverse procedure, that is, to attempt fitting the soma into the realm of the psyche."[31] By 1960 Benjamin had adopted the term *psychological sex*. "The person in adult life," he said, "should live in the sex of his choice. In other words, the psychological sex should be decisive."[32]

Whereas Dillon, Hamburger, and Benjamin saw psychological sex as a direct result of a hidden physical—genetic or endocrine—condition, other scientists who studied intersexed conditions turned increasingly to environmental explanations. They discovered that, regardless of their genitals, gonads, or chromosomes, intersexed adults reared as

boys generally had a sense of themselves as men and those reared as girls usually had a sense of themselves as women. The research tended to show that "environmental factors are frequently more important than the sex of the gonads in the development of sex desires and emotions." The research, then, increasingly suggested that "psychological sex" was not determined by biology. This vision of "psychological sex" corroborated on an individual level the anthropological studies that addressed "sex roles" on a cultural level. From the 1920s on, Margaret Mead and others had argued that "sex roles," which varied across cultures, resulted from social learning.[33] The concept of a socially learned psychological sex foreshadowed the concept of gender that emerged in the 1950s.

In the mid to late 1950s three faculty at Johns Hopkins University, John Money, Joan G. Hampson, and John L. Hampson, published a series of articles on intersexuality that introduced the new vocabulary of gender. For the most part, Money, Hampson, and Hampson simply reconfirmed others' findings on the environmental origins of psychological sex. In intersexed individuals, the sense of being a man or a woman resulted not from hormones, gonads, chromosomes, or other physical variables, they argued, but from the sex to which the infant was assigned and in which the child was subsequently reared. After early childhood, when the sense of sex was established, any attempt to change it resulted in psychological harm. To address these issues they chose the word *gender.* In 1955 Money used *gender role* to refer to "all those things that a person says or does to disclose himself or herself as having the status of boy or man, girl or woman," and *gender* to refer to "outlook, demeanor, and orientation." In later articles, jointly authored, Money, Hampson, and Hampson used the term *gender role and orientation*.[34]

To explain the gender of intersexed persons, Money, Hampson, and Hampson avoided psychoanalytic as well as biological models. They turned instead to a behaviorist model of learning, a model that had increasing currency in the postwar United States. In their influential studies of sexual behavior, for example, Alfred Kinsey and his colleagues had rejected both the theory of human bisexuality and psychoanalytic theories of early personality development. They argued that

much of human sexual behavior, including homosexuality and transvestism, resulted from "learning and conditioning."[35] Similarly, in their studies of intersexed conditions, Money, Hampson, and Hampson pointed to forms of social learning as the source of gender. "Gender role and orientation" were neither a result of biological sex nor a sign of mental health or illness. They developed as the child "becomes acquainted with and deciphers a continuous multiplicity of signs that point in the direction of his being a boy, or her being a girl." Money compared gender to a "native language," learned in childhood, deeply ingrained, and "never entirely eradicated."[36] The capacity to learn languages (or genders) was in some sense biological, but the specific language (or gender role and orientation) learned resulted from the social milieu. All three authors speculated that gender role and orientation arose from a process similar to imprinting, in which young animals reacted to specific environmental stimuli that permanently structured their later social behavior. The behaviorist model, at least as applied to the intersexed, presented the sense of maleness and femaleness as immutable, benign variations resulting from early childhood experience.

In 1964 the psychiatrist Robert J. Stoller, in collaboration with his colleague Ralph Greenson, refined the concept of gender with the term *gender identity,* a term that came to dominate the medical literature on transsexuality. Stoller and Greenson used "gender identity" much as others had used "psychological sex," to refer to "one's sense of being a member of a particular sex." Stoller, a psychoanalyst at the University of California at Los Angeles, separated gender from sexuality. He distinguished "gender identity" from "sexual identity," which included "sexual activities and fantasies."[37] The use of "gender identity," as opposed to "gender role," also more clearly differentiated the subjective sense of self from the behaviors associated with masculinity and femininity.

In explaining the sources of gender identity, Stoller attempted to bridge the gap between biological and environmental etiologies. More than many post–World War II psychoanalysts, he looked for a biological substrate of human behavior, and he reminded his readers that Freud, too, had written about biological underpinnings of personality

development. In certain rare instances, Stoller noticed, intersexed subjects had gender identities at odds with their genitalia and the assigned sex in which they were reared. One of these subjects, reared as a girl, had always taken on "male roles." When the child reached adolescence, a physical examination revealed male chromosomes, a penis the size of a clitoris, undescended testicles, and a prostate gland. Stoller read this case as evidence of a "biological force," in which an "overpowering drive" shaped an unshakable gender identity despite the apparent genitals and the sex of rearing. But biology did not play a significant part in Stoller's assessment of transsexuals. In his early work he focused wholly on male-to-female transsexuals, who, he speculated, had a "weaker biological push" that did not counteract the "noxious effects of environment."[38] Transsexuals' crossgender identification resulted from damaging psychodynamic processes in early childhood. In a letter to another psychoanalyst, Stoller explained, "I do not believe that biological factors, other than givens present in all human beings at birth, play a part in these people who wish to change their sex."[39]

In *Sex and Gender*, published in 1968, Stoller developed a more specific psychoanalytic rendition of the early childhood influences that could result in a gender identity at odds with the biological sex. From his clinical records, he constructed a scenario that resulted in male-to-female crossgender identification. A bisexual mother, depressed and beset with penis envy, kept her infant son close to her body in prolonged physical contact, and a distant father failed to protect the son "from the malignant effect of his mother's excessive closeness." The son, according to Stoller, did not separate adequately from the mother; the result was a "core gender identity," established in the first two years of life, permanently and irreversibly at odds with the biological sex. He granted "that it is the style these days to blame women when weakness, passivity, and effeminacy are found in men," but his own psychoanalytic commitments left him little choice but to focus on the mother's effect on her child. Elsewhere in his book Stoller commented briefly on female-to-male transsexuals, whom he considered rare, and speculated vaguely that "too much father and too little mother masculinizes girls."[40]

Although Stoller emphasized the psychological forces that created gender identity in transsexuals, he also embraced, as an underlying as-

sumption, the theory of human bisexuality. Like Money, Hampson, and Hampson, Stoller refused to define sex in terms of chromosomes alone. He defined it instead by breaking it down into constituent parts that included "chromosomes, external genitalia, internal genitalia (e.g., uterus, prostate), gonads, hormonal states, and secondary sex characteristics." "One's sex," he wrote, "is determined by an algebraic sum of all these qualities, and . . . most people fall under one of two separate bell curves, the one of which is called 'male,' the other 'female.'" The sexes, then, were not mutually exclusive. "It is well known," he added, "that there is a certain amount of overlapping in all humans." But instead of discounting the impact of the various bodily parts on gender identity, he did not entirely abandon the biological approach. Stoller found "within the sexes . . . degrees of maleness and femaleness (sex) and of masculinity and femininity (gender)," and he noted potential links in which degrees of sex influenced degrees of gender. Referring to studies on animals, he pointed to the impact of hormones on "gender and sexual behavior," and he also speculated on the influence of "neuroanatomical centers and hierarchies of neurophysiological functions." Nonetheless, he repeatedly emphasized that in the development of gender identity "by far the most powerful effect comes from postnatal psychodynamic factors."[41]

As Stoller moved away from biology and toward psychology, John Money moved in the other direction. In the late 1960s and afterward he backed away partially from the environmental model that he and the Hampsons had promoted in the late 1950s. He, too, adopted the term *gender identity,* and he speculated that for both male-to-female and female-to-male transsexuals, it resulted in part from early exposure to hormones and from the neurophysiology of the limbic system and the temporal lobe. At the same time, he reiterated the earlier findings that acknowledged the crucial impact of learning. "The process of achieving a complete gender identity," he concluded, "is a developmental progression, beginning with genetic foundations and terminating with social learning."[42]

Other researchers also adopted the new language, so much so that by the end of the 1960s gender was the dominant concept in explanations of transsexuality. By 1964 Harry Benjamin described transsexualism as "a striking disturbance of gender role and gender orienta-

tion." In addition to potential genetic and endocrine causes of transsexuality, he now explored "possible psychological causes," including "imprinting" and "early childhood conditioning." He adapted the new research on social learning to his earlier position by suggesting that "conditioning" might "trigger" transsexuality "if a constitutional predisposition was present," thus maintaining his earlier emphasis on organic causes.[43] "It would," he argued, "stretch the imagination a bit too far to ascribe it all to conditioning."[44]

In 1966, when he published his book *The Transsexual Phenomenon*, Benjamin continued to combine the old and new. He repeated and refined the earlier theory of bisexuality. "Every Adam," he told his readers, "contains elements of Eve and every Eve harbors traces of Adam, physically as well as psychologically." He broke sex into seven component parts: "chromosomal, genetic, anatomical, legal, gonadal, germinal [production of ovum or sperm], endocrine (hormonal), psychological and . . . social sex, usually based on the sex of rearing." Some of the physical parts, he claimed, such as hormones and anatomy, were "never entirely male or female," and some of them could be altered. Although everyone shared male and female characteristics, transsexuals had "the most striking" of the "sex-split personalities." It was the transsexual who most exemplified the mixed-sex constitution. He combined this older vision of bisexuality with the new language of gender. He considered gender, or masculinity and femininity, "a mixture of inborn and acquired." The transsexual, he said, had a "reversed gender role and false gender orientation," which he also labeled "gender disharmony." As before, though, he subordinated the learned, imprinted, or conditioned aspects of gender to those he saw as rooted in biology. He pointed to various studies of humans and other animals that speculated on genetic and hormonal causes of male and female behavior differences, and he looked most hopefully to new studies of the brain. He doubted whether environmental conditions alone could create crossgender identification. "The presence of an inborn, organic, but not necessarily hereditary origin or predisposition," he concluded, "appears more and more probable."[45]

More generally, whatever the labels used—"psychological sex," "gender role and orientation," or "gender identity"—the disjuncture

between the sense of self and the visible body increasingly entered into explanations of transsexuality. The concept of gender was widely adopted, in part perhaps because it did not preclude opposing visions of etiology. The gender identity might result from hormones or genes or brain structure, from imprinting or conditioning or other forms of social learning, or from the psychodynamic processes of identification during mother-infant interaction. Participants on all sides of the debate could use the language of gender without undermining their favored position. Gender, then, came to dominate the scientific approach to transsexuality, but it did not resolve the debates about the causes of transsexuality or the definition of sex. Some scientists continued to search for biological causes, while psychoanalysts published case studies pointing to pathological mother-child relationships.[46] Even as Stoller, Money, and others attempted, with varying emphases, to combine biology and psychology, the battles continued unabated.

In the mid-1960s, as today, the scientific theories did not lend themselves to an easy or obvious assessment. To put it another way, neither the psychoanalysts nor the biological scientists made a convincing case. The psychoanalysts relied on their clinical observations and their interpretations of Freud to speculate on the earliest years of their subjects' lives. One early summary of the literature, though, found "no common pattern which allows one to generalize" about the family dynamics of transsexuals. In later works, psychoanalysts continued to disagree among themselves over which unconscious fantasies, defense mechanisms, and psychological defects constituted "the transsexual wish." Furthermore, the psychoanalysts had to concede that neither psychoanalysis nor other forms of psychotherapy had yet relieved a single transsexual of his or her desire to live as the other sex.[47] In short, despite their best therapeutic attempts, they had not altered anyone's gender identity.

Meanwhile the biological scientists failed their own empirical test. They could pinpoint neither a physical cause nor any physical correlates of transsexuality. Measurements of genitals, assessments of physique, and hormonal assays did not reveal any consistently unusual patterns

among transvestites or transsexuals. In 1959 the discovery of sex chromatin material in human cells enabled a simple test of chromosomal sex, but here, too, the studies revealed no statistically significant anomalies.[48] With no actual clinical measurements, Harry Benjamin claimed that around two-fifths of his male-to-female patients and almost one-half of his female-to-male patients seemed to have somewhat underdeveloped gonads; but even Benjamin, the strongest proponent of the biological position, had to admit that the "physical examination of the transsexual patients usually reveals nothing remarkable."[49] Without any evidence to back their theories, the biologically oriented scientists pinned their hopes on parts of the body still invisible to the scientific gaze. From the mid-1960s on, they speculated on the genes, prenatal or neonatal exposure to hormones, and the neurophysiology of the brain.

In their continuing battles, then, each side operated on faith, and neither side could win over the other. As a result, the concept of gender contributed simultaneously to calls for different programs of treatment. By the early 1960s Harry Benjamin and a few others used the concepts of psychological sex or gender identity to support transsexual surgery. As one commentator noted: "Those who favor the operation point out that the psychological determinants of sexual role behavior are more significant than the physiological sex." Or, as Benjamin put it, the "gender-feeling" was "so deeply engrained that the morphological sex" had "to yield."[50] But in the same years, some psychoanalysts used the concept of gender identity to call for psychotherapeutic treatment, especially in childhood, when the gender identity was still in the process of formation. Through the early 1960s Benjamin and his allies had less influence on medical practice than did the psychoanalysts who called for psychotherapy.

From the early 1950s on, American doctors explained transsexuality variously as a result of human bisexuality, psychodynamic processes of personality development, or immutable social learning. The theories were not necessarily mutually exclusive, but the scientists often argued as though they were.

As they delineated their approaches, they refined their terms and came up with new definitions of sex, gender, and sexuality. They broke sex into constituent parts, including chromosomes, gonads, hormones, genitals, reproductive organs, and secondary sex characteristics, all of which taken together determined whether a person counted as female or male. They distinguished biological sex from the sense of a sexed self, which they labeled "psychological sex" and later "gender." They began identifying component parts of gender, distinguishing gender role from gender identity, and also separating gender from sexuality. In the process of refining their language, they differed markedly from their predecessors, who had often lumped the physical characteristics of male and female, the social and psychological components of gender role and gender identity, and the expression of sexuality all under the rubric of "sex." In 1960, for example, Daniel G. Brown, a researcher in the field, pointed to "three different, independently varying components in the psychosexual development of an individual": "(1) the constitutional composition as male or female . . . (2) the process whereby a child learns how to be masculine or feminine . . . and (3) the process whereby a child . . . acquires a sex-object choice."[73] In this way he separated sex, gender, and sexuality.

As all the researchers knew, the study of transsexuality had broader ramifications. If sex was defined collectively by hormones, genitals, gonads, chromosomes, and more, then no single variable could determine who was a man and who was a woman, and with medical inter-

vention some variables could be changed. Furthermore, lack of accord between the sex in the mind and the sex in the body raised a larger question of how anyone came to a sense of a gendered self. "If we are to understand the normal emergence of such a basic personality characteristic as masculinity and femininity," Richard Green wrote, "we must understand extreme deviations from that norm."[74] In this way the research on transsexuals opened the door to biological and social science research on sex determination, sex differences, and the construction of gender. It provided a new approach to older debates on nature versus nurture that continue to preoccupy those who hope to establish the (biological or social) basis of gender and sexuality.

Today we often associate the concept of gender with feminism. As feminists note, the social construction of masculinity and femininity suggests the artifice of gender roles. If gender is not "natural," then why work to sustain it? But in the early 1960s the concept of gender raised different issues. The doctors, researchers, and commentators—almost all of them men—who engaged in the debates over sex and gender did not question the need to maintain gender differences and failed to critique the particular gender roles that assigned to women a secondary social and political status.[75] Instead, some psychologists and psychiatrists developed treatment programs to instill masculinity in boys and femininity in girls. In their view, gender roles were not constricting, and gender variance was not benign. Through the mid-1960s they seemed unaware of or uninterested in the rising feminist movement that was acquiring greater national visibility. They worried about the changes in men's and women's behavior, and they tried to stop them by intervening in childrearing practice. As the social and cultural climate shifted in the late 1960s and early 1970s, feminists and others would rework the research on and transform the language of gender. But in the early 1960s the new research had its most immediate practical impact on masculine girls and feminine boys.

It had less immediate impact on the adults who hoped to change their sex. Nonetheless, self-identified transsexuals took an avid interest in the new scientific and medical literature. At its simplest, they could side with doctors who portrayed crossgender identification as biological and endorsed transsexual surgery, or they could side with doctors

who cast crossgender identification as mental illness and refused to offer the treatment sought. Not surprisingly, they usually chose the former. But theories alone could not satisfy the overwhelming longing to transform one's sex. Transsexuals continued to push for surgery, and a few American doctors responded. As much as the competing theories, the troubled negotiations between transsexuals and their doctors shaped sex-reassignment surgery. The medical practice of "sex change" evolved as transsexual patients insisted on their right to determine their own sex and to alter their bodies to fit their minds.