

## **Epistemic Gender, Sex Beyond the Flesh: Science, Medicine, and the Two-Sex Model in Modern America**

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In his acclaimed *Making Sex* (1990), Thomas Laqueur broaches the shifting conceptualization of sex in Western civilization from the one-sex model, in which men and women were thought to be two versions of a single-sexed body, to the two-sex model, which treated men and women as opposite counterparts.<sup>1</sup> He argues that this dramatic switch took place around the Enlightenment period, and he mainly holds the changing epistemological and political contexts responsible, while suggesting that advancements in medicine and science maintained a relatively minor role in influencing the shift. The problem with Laqueur's analysis is that it concludes with Freud at the end of the Victorian period. If one were to look at the impact of medicine and science from a broader perspective, extending the time horizon into the twentieth century, one would find Laqueur's exposition insufficient.

I should clarify from the outset that I have relatively little problem with Laqueur's contention that the epistemological context of the Enlightenment has granted biology, as opposed to metaphysics, some foundational value in generating the two-sex model. In his words,

As cultural and political pressures on the gender system mounted, a passionate and sustained interest in the anatomical and physiological dimorphism of the sexes was a response to the collapse of religion and metaphysics as the final authority for social arrangements. (Laqueur, 2003, p.306)

Like many other scholars, I am indeed quite confident about Laqueur's historical insight.<sup>2</sup> But what I hope to do in the following pages is to situate

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<sup>1</sup> The author wishes to thank Alan S. Yang for his careful and insightful comments on an earlier version of this paper.

<sup>2</sup> For criticisms of Laqueur, see Park and Nye, 1991; Cadden, 1993; Daston and Park, 1996; Park, 1997; Stolberg, 2003; Harvey, 2004; and, most recently,

a specific relationship in the context of modern America between sex and gender, on the one hand, and science and medicine, on the other, that we do not learn from Laqueur.

Specifically, I will show that although Laqueur ends with a careful analysis of Freud, one of the main themes he fails to highlight is the emergence of a psychological style of reasoning about gender at the turn of the twentieth century. As the early sexologists began to study human erotic desire in an unprecedented manner around that time, gender was no longer determined only through reference to anatomical biology, but, more importantly, it was perceived for the first time in history to have a psychological basis in congruence with an individual's sense of inner self. If gender was rearranged so that it came to bear a 'visible' (anatomical) marker by the end of the eighteenth century due to epistemological and political transformations, it acquired an 'invisible' element once again, so to speak, by the dawn of the twentieth century primarily due to changes in scientific and medical conceptualizations.

Having added a new psychological dimension to their understanding of gender, medical and scientific authorities substantiated the two-sex model in their subsequent investigations of the relationship between sex and gender. From the scientific research studies on sexual differences in the 1930s to the increasing medical recognition of transsexuality and sex reassignment surgery in the 1940s and early 1950s, for example, scientists and medical professionals consistently framed their opinions in terms of two opposite sexes. Even when the distinction between the concept of gender and the concept of sex appeared in the medical literature first around the mid-1950s and beyond, experts still anchored their discussions of gender and sexuality in binary oppositional frameworks—man and woman, masculinity and femininity, heterosexuality and homosexuality. This only illustrates how the two-sex model was fortified, rather than undermined,

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Goldberg, 2006. For Laqueur's response to Stolberg, see Laqueur, 2003.

over the course of the twentieth century through modern science and medicine.

Perhaps the switch from the one-sex model to the two-sex model that occurred within the eighteenth-century Enlightenment context had nothing to do with advancements in medical science, as Laqueur has suggested. Once the shift had taken place, however, scientific and medical understandings of sex and gender took on a particular presence of their own by the opening decades of the twentieth century, and their role became central to the cultural shaping of modern gender politics and epistemology. After having psychologized the two-sex model, scientific researchers and medical doctors occupied a prominent cultural position not only in maintaining a complex notion of gender, but also in the consolidation of the two-sex model in the context of twentieth-century United States.

### **Sex in the Flesh<sup>3</sup>**

Prior to the eighteenth century, Laqueur argues, the one-sex model dominated scientific thinking and understandings about sex in Western civilization (1990). More specifically, according to this model, male and female differed in degrees based on a single-sexed body and were not separated into two distinct kinds of species. Medical experts and scientists showed that the male and female reproductive anatomies highly resembled one another and attributed the different versions of the single-sexed body to at least two genders, men and women. A crucial characteristic of this model was that sex was constructed based on gender, contrasting the way people understand the relationship between sex and gender in the modern era. In making a compelling case for this counter-intuitive claim about the pre-Enlightenment understanding of sex and gender, Laqueur cites Aristotle—among many other prominent physicians before the eighteenth century such as Galen and Soranus—and explains that

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<sup>3</sup> This subheading is directly borrowed from the title of an article by Laqueur (2003).

What we would take to be ideologically charged social constructions of gender—that males are active and female passive...were for Aristotle indubitable facts, “natural” truths. What we would take to be the basic facts of sexual difference, on the other hand—that males have a penis and females a vagina, males have testicles and females ovaries...were for Aristotle contingent and philosophically not very interesting observations about particular species under certain conditions. (1990, pp.28-29)

As such, the boundaries between male and female were shaped through ideologies of gender hierarchy, not rooted in medical and scientific observations of physical differences. Blood, semen, milk, and other bodily fluids and excrements became various measures of the gender of the single-sexed body. Sex was not an ontological basis for the construction of gender, but a metaphorical category for making cultural claims of patriarchy in the pre-modern world.

Then, the Enlightenment movement of the eighteenth century, which promoted the use of reason and rationality in order to broach the reappraisal of previously established social doctrines, generated a shift from the one-sex model to a two-sex model in the Western understanding of the human body. In the process of this transformation, what Laqueur calls the ‘Discovery of the Sexes’, ‘science fleshed out...the categories “male” and “female” as opposite and incommensurable biological sexes’ (1990, p.154). People no longer perceived the female organ as a lesser form of the male’s, or by implication women as a ‘lesser man’, as propounded by significant figures such as Galen and Aristotle. Male and female bodies were now understood to be opposites, serving as the biological basis upon which meanings of gender could be socially inscribed. Men and women no longer implied different variations of the single-sexed body, but two distinct types of species that occupied different realms of social life, performed unique social and cultural duties, and behaved with separate sets of manners. Gender, as it

was conceived after the Enlightenment, changed from being the *definition* of sex to the *socialization* of sex.

Though acknowledging that the switch from the one-sex model to the two-sex model was not an exhaustive one, in the sense that the one-sex model persisted in various sectors of the discourse on sexual difference while the two-sex model quickly gained popularity, Laqueur argues that changing epistemological and political contexts, rather than medicine and science alone, constituted the major preconditions for the switch. The new epistemological framework, reflecting the Enlightenment effort, presented facts as facts, distinguished facts from fiction, science from religion, and science from credulity. As an effect, nature became the official proclamation of truth (Laqueur, 1990, p.151). In addition to epistemology, for Laqueur, the new political context provided the possible conditions for mobilization and spaces for resistance based on differences among various subject positions. ‘Politics, broadly understood as the competition for power’, writes Laqueur, ‘generate[ed] new ways of constituting the subject and the social realities within which humans dwell’ (1990, p.11). Taken together, Laqueur foregrounds the rearrangements of epistemological framework and political context as the two primary forces that animated the invention of the two opposite sexes, while he backgrounds advancements in medical and scientific knowledge.

### **Sex in the Mind**

But what happened after the shift from the one-sex model to the two-sex model? As Laqueur himself notes in his book, medical and scientific authorities, along with those who depended on them, ceased to emphasize the importance of female pleasure and orgasm around the same time that the female body came to be understood as the incommensurable opposite of the male’s (1990, pp.181-192). So as female orgasm ‘disappeared’ between the seventeenth and the nineteenth centuries, based on historian Nancy Cott’s

interpretation of the Victorian sexual ideology, women's feelings got relegated to a place of 'passionlessness', characterized by a lack of sexual appetite, motivation, and aggressiveness. According to Cott, 'the ideology of passionlessness was [first] tied to the rise of evangelical religion between the 1790s and the 1830s', and it was later prescribed as the sexual norm for women by physicians in 'a second wave, so to speak, beginning at mid-century' (1978, p.221). Therefore, by the time that the nineteenth century entered its second half, the fortification of the two-sex model, as it was linked to the erasure of female sexual pleasure, gradually emerged as an exclusive task that simultaneously reflected and reinforced the authoritative power of the medical establishment in understanding sex.

The concrete influence of medicine and science in the cultural normalization of the two-sex model first culminated in the investigation of same-sex desire around the turn of the twentieth century, when sexologists began to produce extensive volumes and an unprecedented quantity of literature on the subject. Before the intervention of the sexologists, according to historians such as Carroll Smith-Rosenberg, Anthony Rotundo, and Lillian Faderman, romantic friendships between same-sex individuals flourished in Victorian society among middle-class women and men.<sup>4</sup> Although the sexual nature of these intimate bonds can never be perfectly discerned, historians have generally reached the consensus that these relationships provided an opportunity in which same-sex love and desire could be expressed. In fact, these same-sex intimate ties were often viewed

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<sup>4</sup> The literature on Victorian intimate friendships is extensive. See Smith-Rosenberg, 1975; Faderman, 1978a, 1978b, 1978c, 1981, and 1991; and Rotundo, 1992, esp. pp.75-91. Smith-Rosenberg's seminal essay is inspired by Taylor and Lasch, 1963. More on same-sex romantic friendship, see also Norton, 1998; Haggerty, 1999; Crain, 2001; Katz, 2001; Traub, 2002; Vicinus, 2002; Bray, 2003; and Nissen, 2003. William Benemann (2006) coins 'romantic mentorship' and 'erotic employment', and differentiates these two concepts from 'romantic friendship', claiming to 'go beyond' previous historical scholarships on the subject of same-sex intimacy in nineteenth-century America. For more historical and philosophical discussions on friendship and homoromance without gay identity in a more contemporary framework, see Kristeva, 1983; Berube, 1990, pp.175-200; Derrida, 1994; and Taylor, 2002.

as compatible with heterosexual love and marriage, challenging the 'repressed' view of Victorian sexuality that was adopted as a kind of orthodoxy among many earlier historians.<sup>5</sup> According to Faderman, the major contribution of the sexologists, such as Richard von Krafft-Ebing, Havelock Ellis, and Sigmund Freud, was the pathologization of same-sex desire and the coda of same-sex romantic friendships.<sup>6</sup>

At the dawn of the twentieth century, the concept of *sexual inversion*, a clinical phrase that described the condition of sexually desiring persons of the same sex, enjoyed a wide currency among scientists, psychologists, psychiatrists, medical professionals, and other self-appointed experts, first in Europe, then followed by the ones in the United States, who inaugurated the intense scientific classification and study of human sexual behavior and identity. Although the term 'homosexuality' was already coined publicly by Karoly Maria Benkert (pseudonym Kertbeny) in Germany in 1869, at its inception, the early sexological discourse more frequently referred to 'sexual inversion' for describing the same condition. Under the general rubric of 'sexual inversion', the politics of knowledge about homoeroticism and same-sex desire was complicated.

On the one hand, many sexologists contended that homosexuality was a pathological condition. With the publication of his famous *Psychopathia Sexualis* in 1886, forensic psychiatrist Richard von Krafft-Ebing saw sexual inversion as a form of neurotic degeneracy, an urban disease that relegated humans to a lower evolutionary trait of sexual hermaphroditism away from the more ideal sexual dimorphism that

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<sup>5</sup> The major earlier historians who challenged the 'repressed' view of Victorian sexuality include Carl N. Degler, 1980; Peter Gay, 1984; and Ellen Rothman, 1984. See also D'Emilio and Freedman, 1988; and Lystra, 1989. Two notable reconsiderations of Victorian sexuality based on these historians' works are Stearns and Sterans, 1985; and Siedman, 1990. More on Victorian sexuality, see Smith-Rosenberg, 1975; Cott, 1978; Reed, 1978; Faderman, 1981; Jensen, 1986; Osterud, 1991; Rotundo, 1992; and Horowitz, 2002.

<sup>6</sup> Faderman, 1978a, 1978b, 1978c, 1981, and 1991. For a major criticism of this view, see Chauncey, 1989.

characterized higher level living species.<sup>7</sup> Sigmund Freud, the father of psychoanalysis, though later distancing himself from sexology, offered contradictory views of homosexuality, describing it as a problematic psychological outcome of inadequate early childhood experiences, while suggesting that everyone was born with a ‘polymorphously perverse disposition’.<sup>8</sup> American psychoanalysts later appropriated a decidedly conservative interpretation of Freud and strongly advocated the cure and treatment of homosexuality through psychotherapies and other medical interventions such as electroshock treatments or aversion therapies.<sup>9</sup> In his 1905 influential work *The Sexual Question*, the Swiss neurologist August Forel provided a view of lesbianism that resonated with many of his contemporaries who commented on the subject: the ‘women inverts...satisfy their pathological appetite by degenerate practices’, and the ‘normal’ woman when ‘systematically seduced by an invert, may become madly in love with her and commit sexual excesses with her for years, becoming herself essentially pathological’ (1935 [1905]pp.251, 253).

On the other hand, however, some sexologists advocated the view that sexual inversion was simply a benign variation in the human population. Karl Heinrich Ulrichs, a German jurist without formal training in science or medicine, was the first to devise a scientific theory of homosexuality in 1864. His major contribution to sexology was the idea of

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<sup>7</sup> Krafft-Ebing, 1886. This is the first English translation of *Psychopathia Sexualis*, which differs from the English translation of the 12<sup>th</sup> German edition that most historians today rely on: Krafft-Ebing, 1903. It is interesting to note that one year before his death, Krafft-Ebing wrote an article in which he reversed his life-long position that argued for the degenerate nature of homosexuality, and acknowledged the possibility that homosexuality may not necessarily be a mental pathology. The most careful analysis of Krafft-Ebing’s influence on and contribution to the modern notion of sexual identity to date is Oosterhuis, 2000.

<sup>8</sup> Although Freud’s view of homosexuality is dispersed throughout his writings, I would recommend his following works, among others: Freud, 1905, 1905-09, 1905-38, 1909-18, and 1929.

<sup>9</sup> For the argument that Freud himself actually viewed homosexuality with a much less pathologizing perspective than his American contemporaries and followers, see Abelow, 1993. See also Davidson, 2001, pp.66-92.



the *third sex*, which gave rise to the notion of sexual inversion. In his view, ‘Urnings’, his term for homosexuals, constituted a third distinct group of human species that was neither fully male nor fully female (Ulrichs, 1994 [1863-74], vol. 1, p.36).<sup>10</sup> British romantic writer Edward Carpenter, who was the first president of the British Society for the Study of Sex Psychology in 1914, adapted and popularized Ulrichs’ view in his two widely-read books, *Love’s Coming of Age* (1896) and *Intermediate Sex* (1908), by replacing ‘third sex’ with the phrase ‘intermediate sex’.<sup>11</sup> In his writings, Carpenter even went on to suggest that same-sex eroticism, as experienced by the ‘intermediate sexes’, was perhaps a higher order of desire than heterosexual eroticism (1912 [1908], p.20). The prominent English sexologist Havelock Ellis, in his encyclopedic *Studies in the Psychology of Sex*, especially in his volume dedicated to the study of sexual inversion (1901), also showed sympathy to the view that sexual inversion was a relatively harmless phenomenon. He collaborated closely with Carpenter and conveyed the message that homosexuals should not be legally prosecuted due to his belief that sexual inversion was a congenital predisposition.<sup>12</sup> Understanding homosexuality as a congenital predisposition was further emphasized in the works of German physician Magnus Hirschfeld, who organized the Scientific-Humanitarian Committee in 1897, continuing Ulrichs’ agenda of decriminalizing homosexual

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<sup>10</sup> On Ulrichs, see Kennedy, 1988.

<sup>11</sup> On Edward Carpenter, see Crosby, 1901; Ellis, 1910; Lewis, 1915; Carpenter, 1916; Beith, 1931; Rowbotham and Weeks, 1977; and Tsuzuki, 1980. The British Society for the Study of Sex Psychology later changed its name to the British Sexological Society in 1920. On the British Sexological Society, see Weigle, 1995.

<sup>12</sup> The first English edition of *Sexual Inversion* was published in 1897, the second in 1901 as part of the *Studies*. The manuscript was translated into German by Hans Kurella and published in Leipzig in 1896 with J. A. Symonds’ name included as the co-author (Ellis and Symonds, 1896). On Havelock Ellis, see Goldberg, 1926; Calder-Marshall, 1959; Collis, 1959; Robinson, 1976; Rowbotham and Weeks, 1977; Brome, 1979; Grosskurth, 1980; and Draznin, 1992.

behavior in Germany, and later established the Institute for Sexual Science in 1919.<sup>13</sup>

The politics of knowledge about same-sex desire was complicated precisely because writings on the subject were filtered through various constituencies that included: (1) prominent scientific and medical authorities like Krafft-Ebing and Freud who clinically pathologized the condition of sexual inversion; (2) their patients who wrote letters to them expressing disagreements and disappointments with their theories; (3) feminists of the time who argued against the sexologists' link between female sexual inversion and the women's rights movement; (4) self-identified homosexuals within the circle of expertise such as Ulrichs and Hirschfeld; and, (5) influential 'allies' among the founders of sexology like Ellis who supported tolerance of homosexuality. Around the turn of the twentieth century, then, the sexologists' intervention on the topic of same-sex desire did not remain a neat, collective discourse that simply and unitarily pathologized homosexuality as many historians, including Faderman and Michel Foucault in the first volume of his renowned *History of Sexuality*, depicted it to be.<sup>14</sup> In fact, it was a complicated discourse of interaction between medicine and science, full of contradictions and contestations among the experts themselves who theorized homosexuality with a range of intention from pathologization to normalization to glorification.

Above all, the turn-of-the-century sexological discourse achieved two major outcomes. The first outcome was the emergence of a psychological understanding of gender through which homosexuality was theorized as a specific manifestation of gender 'inversion'—or, to use the term the sexologists favored, 'sexual inversion'. When discussing

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<sup>13</sup> Hirschfeld, 2000[1914], 1935, and 1940. On Hirschfeld, see Wolff, 1986; and LeVay 1996. The secondary literature on the turn-of-the-20<sup>th</sup>-century sexologists, again, is too vast to cite all of them here. For a fair overview of the sexologists' views of homosexuality, in addition to the works of Faderman, see Weeks, 1981; Chauncey, 1989; Garber, 1995; Rosario, 1997; Terry, 1999, esp.chap.2; Duggan, 2000; Fausto-Sterling, 2000; Angelides, 2001; and Rosario, 2002.

<sup>14</sup> Faderman, 1978a, 1978b, 1978c, 1981, and 1991; and Foucault, 1976.

homosexuality in the context of sexual development, Krafft-Ebing, for instance, stressed the importance of a psychic dimension:

With the inception of anatomical and functional development of the generative organs, and the differentiation of form belonging to each sex, which goes hand in hand with it in the boy or girl, *rudiments of a mental feeling corresponding with the sex* are developed. (1886, pp.185-6, emphasis added)

Similarly, the Berlin psychiatrist Albert Moll, the author of the first medical monograph entirely devoted to the topic of sexual inversion, viewed male same-sex desire as the ‘feminine’ mentality of a person with normal male biological genitalia—‘sexual sensations of a feminine nature among men whose genital organs are normally formed’ (1891, p.17). Even sexologists who promoted greater tolerance of homosexuality also portrayed homosexuals’ inner sense of self as merely an inverted sex. Presenting himself as speaking on behalf of male homosexuals, Ulrichs wrote: ‘Nature developed the *physical male* germ in us, yet *mentally*, the *feminine* one’ (1994 [1863-74], vol. 1, p.58). Even though they had diverging opinions with respect to the clinical status of homosexuality, all of these early sexologists described people with same-sex desire as possessing a mentality of the opposite sex.

The second outcome was the reinforcement of the two-sex model in which the nature of sexual desire was expansively theorized by adhering to a binary oppositional system for both sex and gender. For those sexologists who pathologized homosexuality, normal sexuality was defined as the status of having a biological sex and a psychological gender that were aligned properly so that sexual desire would be channeled toward the opposite sex. In depicting homosexuals as individuals whose inner psychological sex (gender) was the opposite of their physical sex, even those sexologists who did not pathologize homosexuality constantly relied on the idea of two incommensurable sexes (the two-sex model). Without the two-sex

conceptual framework, countless debates around the topic of people's erotic drive toward members of the same or opposite sex would not have taken place both inside and outside the medical scientific community. As the nineteenth and twentieth centuries unfolded, these debates never ceased to end, and people never stopped thinking about their sexual tendencies along the axis of object choice between the two disparate sexes. Indeed, the idea of a psychological version of sex, first articulated in the early discourse of sexology, expanded scientists' and physicians' conceptual space for thinking about the relationship between sex and gender beyond the strict terms of biology versus culture.

### **Gender and Its Modern Epistemic Arrangements**

The writings on sexual inversion by the early sexologists remained most influential to the way American scientists and medical experts conceptualized sex from the 1900s to the 1920s. Because homosexuality affronted the middle-class Victorian ideal that women and men were thought to be opposite counterparts, the former chaste and passive, and the latter dominant and protective, most American doctors viewed the existence of homosexuality as evidence for a degenerating social order in the early twentieth century. For example, the National Committee for Mental Hygiene was established in 1909 in New York City with the central purpose of preventing and improving individuals' psychological problems. The Committee's medical experts often expressed in its journal, *Mental Hygiene*, that mental problems, including homosexuality, had important social repercussions (Sicherman, 1967; Terry, 1999). By the 1910s, not only did American medical writers increasingly adopt Krafft-Ebing's degeneration explanation of homosexuality, but also Freudian psychoanalysis had begun to transform psychiatric thinking in the United States.<sup>15</sup> Following their

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<sup>15</sup> On Freud's influence on American psychiatry, see Hale, 1971 and 1995.

European counterparts in conceptualizing homosexuality in both degeneration and psychogenic frameworks, medical experts in the United States emphasized and defended the two-sex conceptual framework by which they understood normal men and women, as opposites, to be naturally attracted to one another.

Although the two-sex model prevailed in scientific and medical thinking at the time, the 1920s cultivated the roots for a variation of the one-sex model to return to being in vogue to the research studies on sexual difference during the 1930s. In fact, earlier sexologists, most notably Ellis, Freud, and Hirschfeld hinted at a theory of human bisexuality that viewed men as possessing female traits and women having male traits, but they lacked concrete scientific findings to support such a theory (Ellis, 1901; Freud, 1905; Hirschfeld, 2000 [1914]). After World War I, under the influence of Freud, American sex scientists began to view sex as being more complicated than a simple form of expression between lovers.

On the one hand, the popular discourse of the 1920s strongly promoted ‘marital hygiene’ and presented the concept of heterosexual ‘companionate marriage’ as the ideal form of intimacy, which served as a backlash against both feminism and lesbianism.<sup>16</sup> On the other hand, the scientific sex researchers of the era including Katharine Bement Davis, Gilbert Hamilton, and Robert Dickinson and Lura Beam, regarded same-sex sexual practice—especially lesbianism—with much greater tolerance.<sup>17</sup> In Katherine Bement Davis’s pioneering study on women, *Factors in the Sex Lives of Twenty-two Hundred Women* (1929), for example, previous same-sex erotic experience was reported by approximately half of her unmarried respondents and a third of her married respondents (pp.247, 298). Around

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<sup>16</sup> The term ‘companionate marriage’ was coined in 1927. Writings that promoted it include Van de Velde, 1926 and 1928; Lindsey and Evans, 1927; and Dell, 1930. On the effects of ‘companionate marriage’ on views of lesbianism, see also Simmons, 1979. On ‘compulsory heterosexuality’ in the 1920s, see Rapp and Ross, 1983.

<sup>17</sup> For the publications of the scientific sex researchers, see, for example, Hamilton, 1929; and Hamilton and MacGowan, 1929.

the same time, gynecologist Robert Latou Dickinson voiced his firm belief that doctors should concern themselves with assisting women achieve sexual happiness. Collaborating with psychologist Lura Beam, Dickinson published *A Thousand Marriages* (1931) and *The Single Woman* (1934) based on his gynecological experiences since the 1890s. In addition to promoting sex education for the American public, the writings of Davis and Dickinson also expressed the idea that sexual desire and activity, whether procreative or non-procreative, was important to the happiness of American women and men. Instead of understanding homosexual desires as merely pathological, sex researchers in the 1920s interpreted homosexuality simply as a variation of normal sexuality.

Building on this context of progressive research in sexual science, scientists from various academic disciplines, including endocrinology and cultural anthropology, provided ample evidences to support the theory of human bisexuality in the 1930s. In endocrinology, Dr. Clifford A. Wright, a physician at the Los Angeles County General Hospital and Associate Professor of Clinical Medicine at the College of Medical Evangelists, wrote many articles on hormonal research and homosexuality that situated men and women on a continuum based on the startling findings of other biochemists that men and women had both female and male hormones.<sup>18</sup> According to Wright,

All individuals are part male and part female, or bisexual, and this fact is substantiated by hormone assays in the urine. The urine of the normal man or woman shows the presence of hormones of both the male and female types....In the normal male, the male hormone predominates; in the normal female, the female hormone predominates. This in my opinion is the cause of normal sex attraction. In the homosexual the dominance is reversed. In the man, for example, there is a predominance of the female element and in the homosexual woman a dominance of the male factor. (1938, p.449)<sup>19</sup>

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<sup>18</sup> For a history of sexual hormonal research, see Oudshoorn, 1994.

Similarly, cultural anthropologists Ruth Benedict and Margaret Mead, students of Franz Boas, provided ethnographical support for the idea that sex roles varied across culture in their classic texts: *Coming of Age in Samoa* (1928), *Growing Up in New Guinea* (1930), and *Sex and Temperament in Three Primitive Societies* (1935) by Mead, and *Patterns of Culture* (1934) by Benedict.<sup>20</sup> Based on her fieldwork at Arapesh, Mundugumor, and Tchambuli, Mead remarked that

the temperaments which we regard as native to one sex might instead be mere variations of human temperament, to which the members of either or both sexes may, with more or less success in the case of different individuals, be educated to approximate. (1935, p.xl)

Around the same time, a number of other anthropologists had begun studying the role of the *berdache*, an individual whose socially sanctioned role was the opposite of his or her sex anatomy, in Native American societies.<sup>21</sup> Taken together, scientists in the 1930s posited a model of sexual fluidity that portrayed the differences between men and women only in degrees on a continuum, which resonated with the one-sex model in the pre-Enlightenment period that Laqueur identified (Terry, 1999, ch. 5).

Even though situating men and women on a continuum by scientists may appear to represent the resurgence of the one-sex model in the 1930s, one critical difference existed between the two. For pre-Enlightenment physicians, socialization of the sexes was the definition of sex itself and

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<sup>19</sup> For similar arguments in Wright's other studies, see Wright, 1935, 1939, and 1941. See also Glass, Deuel, and Wright, 1940.

<sup>20</sup> The most recent critical biography of Mead and Benedict is Banner, 2003. I am aware of the controversy surrounding Mead's fieldwork in Samoa, but it is outside the scope of this paper. For a brief discussion of the publicized attacks on her findings by the New Zealand anthropologist Derek Freeman, see Banner, 2003, pp.234-240.

<sup>21</sup> In fact, both Mead and Benedict had also mentioned similar materials in their works. For other examples, see Forde, 1931; Gifford, 1933; Hill, 1935 and 1938; Devereux, 1937. For more recent writings on this subject, among others, see Williams, 1986; Roscoe, 1991; and Lang, 1998.

‘men’ and ‘women’ only represented two versions of the single-sexed body. In the early twentieth century, however, a paradigm shift characterized scientific and medical understandings of the human body, namely the introduction of a chemical model of sex and the body through the emergence of sex endocrinology. According to Nelly Oudshoorn, ‘the concept of hormones was coined in 1905’, and the new science of ‘sex endocrinology established its material authority by transforming the theoretical concept of sex hormones into material realities: chemical substances with a sex of their own’ (1994, pp.9, 43). As a result of this new enterprise that involved laboratory scientists, clinicians, and pharmaceutical entrepreneurs, scientific and medical conceptualizations of men and women did not only remain in the framework of a continuum, but more importantly hypostatized the idea that biological men and women were fundamentally different. The ‘seat’ of masculinity and femininity, alongside the ‘essence’ of male and female, ‘came to be located not in an organ but in chemical substances: the sex hormone’ (Oudshoorn, 1994, p.8). Therefore, the idea of sex fluidity that anchored much of the scientific discussions about sexual differences in the 1930s, though carrying some characteristics of the one-sex model, more significantly reconsolidated and concretized the two-sex model.

While ‘to *desire* someone of a particular sex’ remained a constant subject of investigation, ‘to *be* someone of a particular sex’ attracted an escalated amount of attention from medical doctors and research scientists. By the time many transsexuals, individuals who felt a strong drive to become members of the opposite sex by changing their own physical sex, began to seek professional surgical intervention in the 1940s and the 1950s, the two-sex model again found increasing support among medical experts and scientists who denied the optimistic outcome of sex change surgery. On the one hand, some medical experts, mostly in Europe, used the theory of human bisexuality to legitimate the administration of sex transformation surgery on transsexuals. Harry Benjamin, for instance, under the influence



of Forel's *The Sexual Question*, received his medical degree in Germany in 1912 and then came to the United States in 1913. Coming from the German tradition of sexology, Benjamin was the key figure to introduce European sexual science to experts and the public of the United States. Having previously collaborated with Hirschfeld and studied under Eugen Steinach, Benjamin became the main endocrinologist and physician of Christine Jorgensen, the first American male-to-female transsexual to undergo sex reassignment surgery abroad in Denmark and who received great notoriety as a result of mass media publicity upon her return to the United States in the 1950s. Both Benjamin and Jorgensen used the theory of bisexuality to explain her condition and justified her sex change surgery based on the idea that transsexuals were simply extreme versions of a universal bisexual condition.<sup>22</sup>

On the other hand, most American medical professionals, psychiatrists and psychoanalysts in particular, rejected the view of universal human bisexuality and argued that identification and behaviors that did not conform to the rigid opposition of the two sexes (the two-sex model) were the result of troubled early childhood experience and thus mental disorders. In refuting the biological model of bisexuality that situated sex on a continuum, this group of experts advocated the necessity of psychotherapeutic intervention for those individuals with behaviors and identifications that did not follow the conventional sexual norm. They disapproved of medical intervention in the form of sex change surgery as the ideal method for treating transsexuals. Implicitly, these psychologists and psychiatrists relied on the rigid notion of opposite biological sexes to see various forms of atypical sexual identification as a psychological, not physical, problem. In repudiating the claim of universal bisexuality held by people like Benjamin, according to historian Joanne Meyerowitz, 'the psychological position seemed to predominate through the 1950s' (2002,

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<sup>22</sup> Benjamin, 1945, 1953, 1954, 1955, and 1966. See Meyerowitz, 2002, esp.ch. 3.

p.99).<sup>23</sup> This reflects both the significance of the psychological definition of gender that permeated medical thinking and the rising authoritative status of psychoanalysts and psychiatrists in American society after World War II.

In the midst of the fury medical debate about transsexuality, ‘gender’ got defined officially as a separate concept from ‘sex’ by a medical psychologist at Johns Hopkins University, John Money. In an article published in 1955, Money used the phrase *gender role* for ‘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’ (1955, pp.254, 258).<sup>24</sup> It is interesting to note that Money, in collaboration with John L. Hampson and Joan G. Hampson at the Johns Hopkins Hospital, was not concerned about the treatment of transsexuals per se when he first distinguished ‘gender’ from ‘sex’, but he did so for the more immediate task of understanding and treating individuals with intersex conditions.<sup>25</sup> Based on their study of intersex patients, they proposed a scientific ‘hypothesis’ that they believed to be compelling and useful:

psychosexual maturation is determined by various life experiences encountered and transacted, and is not predetermined as some sort of automatic or instinctive product of the bodily achievement of sexual maturation. (Hampson and Money, 1955, p.16)<sup>26</sup>

Anatomy at birth, in other words, does not reveal all that is to be known about one’s sexual development.

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<sup>23</sup> On how psychoanalysis dominated the American psychiatric practice from the 1940s to the 1960s, see, for example, Alexander and Selesnick, 1966, pp.181-265; Shorter, 1997, pp.170-181; and Zaretsky, 2004, chap.11.

<sup>24</sup> On gender role, see also Money, Hampson, and Hampson, 1957.

<sup>25</sup> See Hampson, 1955; Hampson and Money, 1955; Money, 1955; Money and Hampson, 1955; Money, Hampson, and Hampson, 1955a, 1955b, 1956, and 1957. The term ‘intersex’ was not used by Money and his collaborators at the Hopkins Hospital back then; they used the term ‘hermaphroditism’ to describe the same condition.

<sup>26</sup> See also Money and Hampson, 1955.

In 1964, building on Money's vocabulary, the psychoanalyst Robert Stoller, working with his colleague Ralph Greenson at the UCLA Medical School, coined the concept of *gender identity* to indicate more directly one's core sense of self as a member of a particular sex. In a paper on homosexuality, Greenson wrote

Gender identity refers to one's sense of being a member of a particular sex; it is expressed clinically in the awareness of being a man or a male in distinction to being a woman or a female. (1964, p.217)

If by 'gender role' Money meant the behavioral and socially prescribed, as well as the socially and historically stereotyped, Stoller and Greenson adopted the term 'gender identity' to slice off and define another layer of gender that is strictly psychological. In fact, they further differentiated gender identity from *sexual identity*, which encompasses one's sexual desire and erotic drive, and thus distinguishing gender from sexuality accordingly (Stoller, 1964). Whereas both concepts were lumped together in the turn-of-the-century discourse of sexual inversion—the sexual invert had both an inverted gender identity and an abnormal sexual identity simultaneously—the language of psychoanalysis now provided medical and scientific authorities sufficient working definitions for setting them apart.

Alongside the competing views of sex—the biological model of universal human bisexuality versus the psychogenic two-sex model that relied on rigid binary oppositions of the two sexes—by the 1960s, 'the new language of gender had resulted in a conservative clinical treatment that attempted to contain unconventional gender behavior and dispel the uncertainties concerning sex' (Meyerowitz, 2002, p.100). Indeed, throughout the decade, many psychologists and doctors developed intervention programs with the goal of controlling changing gender norms and reinforcing traditional gender roles. Perhaps it was partially due to this conservative clinical effort on the parts of medical professionals and

scientists, accompanied by the novel language of gender in the 1960s, the second-wave women's movement and the gay and lesbian movement solidified their roots in this era (D'Emilio, 1983; D'Emilio and Freedman, 1988). In the end, the shifting socio-political climate in the late 1960s and the early 1970s allowed feminists and other political activists to challenge and rework scientific and medical opinions about gender and sexuality. As an example of the consequences, in 1973, the American Psychiatric Association declassified homosexuality as one of its listed mental disorders in the *Diagnostic and Statistical Manual of Mental Disorders*.<sup>27</sup>

### **Conclusion: Making Sex beyond Laqueur**

In studying human sexual tendencies, experts in medicine and science went from the topic of sexual object choice, to the investigation of cross-sex identification, to the task of differentiating the language of gender from the language of sex in their writings. By the 1950s and the early 1960s, sexual categories that were indistinguishable from one another under the general rubric of 'sexual inversion' in early sexology now had their own independent scientific meanings: homosexuality and transsexuality, for example, became neatly detached from one another and referred to different dimensions of an individual's sexual and gender orientation (Rosario, 1996). But more importantly, in their elevated investment in the study of the complex relationships between sex, gender, and sexuality throughout the twentieth century, physicians and scientific researchers had strengthened the two-sex model in modern thinking by consistently insisting on a complex system of sex and gender on top of reproductive anatomy.

Whereas Laqueur has argued compellingly that the transformation from the one-sex model to the two-sex model was not the result of scientific

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<sup>27</sup> For an account of the chronological events that culminated in the American Psychiatric Association's declassification of homosexuality as a mental disorder, see Bayer, 1981. Analyzing the influence of the Kinsey reports on the American mental health profession, Howard H. Chiang (2006) offers an alternative perspective.

advancement but epistemology and politics, I have shown that around the turn of the twentieth century, a distinctly new way of understanding gender emerged precisely through the effort of those scientists and doctors who took on the task of studying human sexuality for the first time in history. As such, the birth of this new ‘epistemic gender’ in the early twentieth century, which is more sophisticated than the notion of gender associated with the Enlightenment two-sex model, illustrates how medicine and science are not simply passive domains of society to be shaped by epistemology and politics, but have the capacity to transform existing epistemological and political horizons in very powerful ways. It was only after gender had been psychologized, for instance, that there could be a medical debate over transsexuality as a symptom of extreme biological bisexuality or inadequate psychosexual development; it was also only after the psychologization of gender had accompanied the medical conceptualization of same-sex desire as a mental pathology, that a political movement could be formed to challenge such elite perspective.

Throughout these historical struggles and contestations, medicine and science remained influential sectors of everyday knowledge that taught people how to understand themselves and others alike, particularly on issues related to sexual identification and desire. Informed by the medical professionals and sexual scientists, people now in general view sex as the fundamental conceptual variable for understanding gender and erotic orientation. As people continue to rely on the opposite and incommensurable relationship between male and female to articulate *any* meaningful ideas about gender and sexuality, the power and cultural authority of medicine and science continue to intensify in making sex beyond the flesh.

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