J Med Humanit
DOI 10.1007/s10912-010-9105-5

Sex and Gender in Psychiatry: A View from History

Laura Hirshbein

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Abstract Although physicians have attempted for centuries to uncover the biological differences between men and women with regard to mental illness, they continue to face the challenges of untangling biological factors from social and cultural ones. This article uses examples from history to illustrate three common problems in trying to establish biological differences: identifying factors as sex-based when they are really gender-based; overlooking changes in masculine and feminine roles over time; and placing too great an emphasis on hormones. By using the benefit of hindsight to identify problems from the past, we can think more critically about these issues in the present and the future.

Keywords History · Mental illness · Hormones

In 1899, Minnesota's Saint Peter State Hospital superintendent H.A. Tomlinson announced that women in America were in grave danger from insanity[1]:

> In the end of the century, when women are warring against their natural position in relation to the reproduction of the species; while the competition of social and industrial life and the growing desire to avoid any responsibility which interferes with material advancement or social opportunity is so strong, it is not surprising that we should find so many disturbances of the nervous system associated with the bearing of children; or that this originally physiological function and process should be credited with the untoward results which so often accompany and follow it.[2]

[1]This paper was originally presented at the Advances in Psychiatry at the University of Michigan in November 2008. Many thanks to Tamara Gay for supporting and encouraging the topic. My research for this paper was supported in part by a grant from the NIH National Library of Medicine. I have no ties (financial or otherwise) to industry and no conflicts of interest to report.

[2]H.A. Tomlinson, "The Puerperal Insanities," *American Journal of Insanity* 56 (1899): 69–88.

L. Hirshbein (✉)
University of Michigan, 1500 E. Medical Center Dr.—SPC 5020, Ann Arbor, MI 48109-5020, USA
e-mail: lauradh@umich.edu

From this distance of time, it is easy to chuckle (or shake our heads in dismay) that a psychiatrist could blame mental illness on women's deviation from their biological destiny of childbearing. Recall that at the time that Tomlinson wrote his article, the "war" that women were waging against their "natural position" involved such radical ideas as demanding the right to vote.[3] Tomlinson's ideas were not fringe, however—he was part of an elite group of physicians who governed psychiatric institutions at the end of the nineteenth century, and he published his views in the journal that would become the *American Journal of Psychiatry*.[4] What is significant about Tomlinson's views is not that they were unusual, but rather that they were *not* considered remarkable in any way. Tomlinson was simply stating what everyone knew—that sex determined the cause and manifestations of mental illness.

For millennia, physicians have been proclaiming that they knew the essential differences between men and women, and with the benefit of hindsight we, can see that they were often wrong, at least by our standards today.[5] But though we believe we know more now about the human body, science, and medicine, we still do not know for sure the biological differences between the sexes in the area of mental illness. One problem is that physicians over time have identified social and cultural differences between men and women and assumed that they arose from biology.[6] While this may seem to have a straightforward solution—eliminate social and cultural variables to uncover biological differences—in practice it has been much more difficult. We are so rooted in our social and cultural contexts that it is hard to disentangle biology from everything else.

There is a relatively modern vocabulary that has been employed to help us understand the differences among biology, social roles, and cultural context: the distinction between sex and gender. Vivian Pinn from the NIH Office of Research on Women's Health explains that sex refers to biological differences, while gender refers to self-definition. According to Pinn, sex is, "The classification of living things as man or woman according to their reproductive organs and functions assigned by chromosomal complement," while gender is, "A person's self-representation as man or woman, or how that person is responded to by social institutions based upon the individual's gender presentation. Gender is rooted in biology and shaped by environment and experience."[7] While the use of "gender" to mean self-definition makes sense on an individual level, scholars in the humanities have also used gender to explore the social and cultural differences between the sexes. Social views of masculinity and femininity—which change over time—both structure and limit how men and women have experienced their gender.[8] Further, historian Joan Scott argues that gender has also been used as a way to express relationships of power. Thus "male" and "female"

[3] A.S. Kraditor, *The Ideas of the Woman Suffrage Movement, 1890–1920* (New York: Columbia University Press, 1965).
[4] G.N. Grob, *Mental Illness and American Society, 1875–1940* (Princeton: Princeton University Press, 1983).
[5] M.H. Green, *Women's Healthcare in the Medieval West: Texts and Contexts* (Aldershot: Ashgate, 2000); M. E. Fissell, *Vernacular Bodies: The Politics of Reproduction in Early Modern England* (New York: Oxford University Press, 2004).
[6] R. Bleier, *Science and Gender: A Critique of Biology and Its Theories on Women* (New York: Pergamon Press, 1984); N. Tomes, "Historical Perspectives on Women and Mental Illness," in *Women, Health, and Medicine in America*, ed. Rima D. Apple (New York: Garland Publishing, Inc., 1990), 143–72.
[7] V.W. Pinn, "Sex and Gender Factors in Medical Studies: Implications for Health and Clinical Practice," *JAMA* 289 (2003): 397–400.
[8] M.S. Kimmel, *Manhood in America: A Cultural History* (New York: Free Press, 1996); S.M. Rothman, *Woman's Proper Place: A History of Changing Ideals and Practices, 1870 to the Present* (New York: Basic Books, 1978); P.G. Filene, *Him/Her/Self: Sex Roles in Modern America*, 2nd ed. (Baltimore: Johns Hopkins University Press, 1986).

can describe male and female humans but can also be used metaphorically to articulate a power differential.[9]

For example, in the late nineteenth century, a number of physicians in both psychiatry and gynecology removed ovaries from mentally ill women (in a procedure they identified as castration) with the belief that they were improving the women's mental state. One surgeon in 1892, however, pointed out that this procedure involved a power dynamic that was not possible for male patients:

> Woman perforce has to endure many hardships which man finds it easy to regard as the heritage of her sex. But suppose this matter of therapeutic castration should be applied to the male sex; a hospital superintendent, with equal reason and expectation of cure, might begin to castrate *male* insane patients, in the same scientific hope of relieving erotic or other paroxysms of excitement. The medical superintendent who would advocate or practice such mutilating operations upon men would be promptly denounced, if not legally prosecuted.[10]

Thus, assumptions about the role of sex organs in mentally ill women in the nineteenth century involved not only theory but also a powerful practice (that would not have been tolerated in men). Though physicians who performed therapeutic castration of women honestly wanted to help their patients, our distance in time helps us identify their historically contingent ideas about women's biology.[11]

Over the last century, psychiatrists have tried to determine actual biological differences between men and women, but in this effort, they faced three challenges that tended to confound their results. First, they used the idea of sex to explain differences that were actually more due to social and cultural factors. Second, when they did recognize the role of culture, they assumed that culture was a fixed constant instead of something that changes over time. Third, they relied too much on hormones or other references to reproduction as causes of mental illness, particularly in women.

In this paper, I explore different ways in which psychiatrists viewed the differences between men and women in the context of the evolution of American psychiatry in the first half of the twentieth century. By analyzing theories and practices from the past, we can avoid the blinders of our own culture and see more clearly the tangled relationships among biology, society, and culture. I want to emphasize, though, that the point is not to criticize practitioners from the past but to use the benefits of hindsight to help us think critically about these issues in the present and the future.

Sex instead of gender

In the late nineteenth and early twentieth centuries, American psychiatry was dominated by institutions. The specialty's professional organization had derived from physicians' work in asylums, while early twentieth-century practitioners continued to work largely within hospitals. In that setting, one of the primary ways in which psychiatrists utilized science

[9] J.W. Scott, "Gender: A Useful Category of Historical Analysis," *American Historical Review* 91 (1986): 1053–75.

[10] T.G. Morton, "Removal of the Ovaries as a Cure for Insanity," *American Journal of Insanity* 49 (1892): 397–401, emphasis in the original.

[11] The practice of removing ovaries from mentally ill women continued well into the twentieth century. See J.T. Braslow, "In the Name of Therapeutics: The Practice of Sterilization in a California State Hospital," *Journal of the History of Medicine & Allied Sciences* 51 (1996): 29–51.

was in their observations of patient flow through their buildings. Psychiatrists of this time period relied on the observations of German colleagues such as Emil Kraepelin on the course and prognosis of different forms of illness,[12] but they also spent a fair amount of time tracking differences in groups of male and female patients and interpreting the results.[13]

For example, in 1917, Philadelphia hospital consultant Alfred Gordon reviewed two thousand cases of psychiatrically hospitalized patients to determine important causes of mental disease. Gordon's case series was remarkable at the time it was published for its depth, breadth, and effort to understand both heredity and environment (at a time when many practitioners were only looking to one or the other). Gordon noticed that the men and women in his large series were not distributed evenly, and so he attempted to account for the greater numbers of women in several diagnostic categories. He carefully observed different etiological factors and disease presentations and concluded that women appeared to be particularly vulnerable to psychoneuroses and to involutional melancholia.[14]

In his observations, Gordon decided that the most important etiological factors were those which produced strong emotional sensations. These factors,

> provided to exercise the most potent influence on the affect and through the latter on the ego-complexes have also interestingly enough occurred more in women than in men and in mothers more than in fathers….séances of hypnotism and of spiritualism have had also a powerful disturbing effect more in women than in men. It is legitimate therefore to conclude that affective states which are the expression of feeling-tone are more strikingly developed and more readily responsive in females than in males.[15]

In other words, women were more emotional than men and responded more to stress. Gordon noticed that there appeared to be differences in rates of occurrence for men and women in dementia praecox (schizophrenia), paretic dementia (tertiary syphilis), and paranoia—but he did not make an effort to explain them (in all these cases, men outnumbered women). He did, though, explain the higher number of women in the group of patients with involutional melancholia in terms of the role of menopause. In the end, Gordon concluded that women had two biological characteristics different from men: they were more affected by strong feelings, and they were vulnerable to emotional problems due to menopause.

Although Gordon's disease groupings do not translate into our modern nosology, Gordon's process is similar to one that has continued in the 90 years since his study: he observed a large number of patients, saw differences between the incidence of disease in women and in men, and offered an explanation for the illness.[16] But how much is this kind of process affected by broader social and cultural factors? Gordon was not likely trying to make a political statement with his assertion that women were more emotionally sensitive

[12] E. Shorter, *A History of Psychiatry: From the Era of the Asylum to the Age of Prozac* (New York: John Wiley & Sons, 1997).
[13] Early twentieth-century psychiatrists' focus on sex was remarkable since other kinds of difference were capturing public and professional attention, especially race and ethnicity relating to fears of increasing American insanity. See I.R. Dowbiggin, *Keeping America Sane: Psychiatry and Eugenics in the United States and Canada, 1880–1940* (Ithaca, NY: Cornell University Press, 1997).
[14] A. Gordon, "Psychoneuroses, Psychoses and Mental Deficiency in 2000 Cases Considered Especially from the Standpoint of Etiological Incidents and Sex," *American Journal of Insanity* 73 (1917): 721–36.
[15] Ibid., p. 726.
[16] For a history of clinical symptoms over time, see G.E. Berrios, *The History of Mental Symptoms: Descriptive Psychopathology since the Nineteenth Century* (New York: Cambridge University Press, 1996).

than men—he believed he was reporting what he saw. Yet it is hard to imagine that he would have been unaware of two areas of argument about the role of emotion that were taking place at the time he wrote the article. First, Gordon's article appeared 3 years before the passage of the Nineteenth Amendment which gave women the right to vote. One of the arguments made by those opposed to the amendment was that women were not rational, that they were too emotional to be able to make clear decisions as voters.[17] The other discussion that was going on at the time was around the alarming rate of shell shock in the European War (what we now know as World War I). American and European psychiatrists were concerned because one of the manifestations of shell shock was excessive emotion in a population of young men. Quite apart from the issue of biology, the presence of strong emotions had a political, social, and cultural meaning with different implications for men and women at the time. Gordon's assertion that women were more susceptible to certain kinds of mental illness due to emotional sensitivity could have supported fears about women voters, but it also could have raised questions about the masculinity of soldiers who developed shell shock.[18]

Gender roles also determinate

Although psychiatrists primarily looked at hospitalized patient populations through the first decades of the twentieth century, neurologists (who were distinguishable from psychiatrists only in their location of practice) and other physicians observed mental problems they encountered in office practice.[19] And in their descriptions of a variety of mental ailments, these practitioners assumed that men's and women's roles were dictated by nature and structured their interactions in society. Deviations from these roles—either from neglect or through too enthusiastic adherence—could lead to problems.

In the late nineteenth and early twentieth centuries, psychiatrists and neurologists worried about men's working lives and their vulnerability to nervous ailments, especially neurasthenia—a kind of nervous sensitivity that has no modern equivalent.[20] As New York physician Warren Babcock described in 1900, men were vulnerable to neurasthenia if they became too enmeshed in their work: "In the average business man, who voluntarily subjects himself to an intolerable grind of office work, without adequate exercise, the development of neurasthenic symptoms, so often the antecedent of melancholia, should be the first indication for preventive treatment."[21] Psychiatrists such as Babcock understood that men of the time were subjected to social and cultural forces, but they assumed that these forces

[17] S.M. Evans, *Born for Liberty: A History of Women in America* (New York: Free Press, 1989).

[18] P. Lerner, *Hysterical Men: War, Psychiatry, and the Politics of Trauma in Germany, 1890–1930* (Ithaca, NY: Cornell University Press, 2003); C. Cox, "Invisible Wounds: The American Legion, Shell-Shocked Veterans, and American Society, 1919–1924," in *Traumatic Pasts: History, Psychiatry, and Trauma in the Modern Age, 1870–1930*, ed. Mark S. Micale and Paul Lerner (New York: Cambridge University Press, 2001), 280–305.

[19] For a classic discussion of the similarities and differences between neurology and psychiatry in this time period, see C.E. Rosenberg, *Trial of the Assassin Guiteau: Psychiatry and Law in the Gilded Age* (Chicago: University of Chicago Press, 1968).

[20] For more on neurasthenia, see C.E. Rosenberg, "George M. Beard and American Nervousness," in *No Other Gods: On Science and American Social Thought* (Baltimore: Johns Hopkins University Press, 1976), 98–108 For an outstanding analysis of nervous illness and men, see M.S. Micale, *Hysterical Men: The Hidden History of Male Nervous Illness* (Cambridge: Harvard University Press, 2008).

[21] W.L. Babcock, "On the Treatment of Acute and Curable Forms of Melancholia," *International Medical Magazine* 9 (1900): 1.

would not change—men were inevitably susceptible to mental disease because of their work. The problem was not the role, it was the degree to which an individual could achieve his role expectations.

The historical moment in time when Babcock articulated his (and others') views of men's susceptibility to nervous disease highlights how much gender roles depend on historical context. At the turn of the century, intellectual men were often perceived as vulnerable to stresses on their nervous systems. Well known figures such as philosopher and pioneering psychologist William James suffered from nervous headaches and appeared to have delicate constitutions.[22] Yet that vulnerability to stress, particularly emotional stress, did not persist as prevailing ideas of masculinity changed by the twentieth century. (Indeed, as we have seen, that idea had disappeared by the time that Gordon made his observations in 1917.) Instead, the ideal for men became one of rugged individuality—exemplified by figures such as Theodore Roosevelt.[23] Neurasthenia in men disappeared not just because diagnostic patterns changed (although they did) but also because of changes in cultural definitions of masculinity.

By the middle third of the twentieth century, an increasing number of American psychiatrists were becoming interested in psychoanalysis.[24] Although the profession as a whole did not fully embrace all of Freud's ideas, many found them quite helpful, especially in understanding development and gender roles.[25] Within this framework, men's and women's gender roles were just as determinate as biological characteristics, and many argued that mental health required a good fit between an individual and his or her role in society.[26]

Psychiatrists emphasized the degree to which individuals developed mental illness because of their failure to achieve gender norms. This perspective could be quite problematic, as we can see with the example of past physicians' erroneous interpretations about homosexuality. For many psychiatrists until the late 1960s, homosexuality itself appeared to represent pathology because of deviation from normal gender development.[27] The issue for many psychiatrists through the first half of the twentieth century was how to explain this deviance.[28] For example, in 1922, psychiatrist Edith Spaulding described what she identified as the well-known pathology of male homosexuality by reference to two factors that she considered equally determinate: hormone deficits and gender role problems. But her description of a boy's pathology relied on common assumptions about appropriate

[22] F.G. Gosling, *Before Freud: Neurasthenia and the American Medical Community, 1870–1910* (Urbana: University of Illinois Press, 1987).
[23] G. Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880–1917* (Chicago: University of Chicago Press, 1995); N.E. Stubbs, "Theodore Roosevelt and Ernest Hemingway: A Study in Two Strenuous Lives," *Theodore Roosevelt Association Journal* 25 (2002): 9–14.
[24] For the history of psychoanalysis in America, see N.G. Hale, *The Rise and Crisis of Psychoanalysis in the United States: Freud and the Americans, 1917–1985* (New York: Oxford University Press, 1995). For gender and psychoanalysis, see for example, C. Bernheimer and C. Kahane, eds., *In Dora's Case: Freud-Hysteria-Feminism*, Second ed. (New York: Columbia University Press, 1990).
[25] Boston psychiatrist Abraham Myerson did a survey in 1939 that indicated that few in psychiatry, psychology and neurology were fully committed to Freud, though many were sympathetic to some of his ideas. A. Myerson, "The Attitude of Neurologists, Psychiatrists and Psychologists Towards Psychoanalysis," *American Journal of Psychiatry* 96 (1939): 623–41.
[26] E. Lunbeck, *The Psychiatric Persuasion: Knowledge, Gender, and Power in Modern America* (Princeton: Princeton University Press, 1994).
[27] R. Bayer, *Homosexuality and American Psychiatry: The Politics of Diagnosis*, Revised ed. (Princeton: Princeton University Press, 1987).
[28] H.L. Minton, "Femininity in Men and Masculinity in Women: American Psychiatry and Psychology Portray Homosexuality in the 1930s," *Journal of Homosexuality* 13 (1986): 1–22.

masculinity. For a boy who would grow up to become a homosexual, "The boy is soon known as a sissy among his playmates. He is not up to the standards of the others in sports. He seeks the protection of his home, oftentimes of his mother, or he tries to compensate for his inadequacies through books or the world of his imagination and emotion."[29] Spaulding's peers praised her for suggesting that both hormones and psychological conflicts could produce this form of pathology. But even though she included a comprehensive view for mental disease causation, her assumptions about the disease itself matched gender assumptions in her time period. Normative male and female behaviors were strictly defined and appeared to be based in nature.

But though professionals believed that their clinical observations were professional—even scientific, it is possible to see where personal assumptions could color clinical interpretations. For example, in 1929, Baltimore psychiatrist Eleanora Saunders outlined a case series of women who experienced psychoses in the month after childbirth. She emphasized that childbirth and parenting were normal functions and that most women did well with them, but "While the puerperal state does not produce any special type of psychosis it is a new or specific experience with new changes for mal-adaption."[30] Saunders explained the kinds of stresses that might be experienced by new mothers and the ways in which these normal stresses might break down a fragile individual. Throughout her discussion, though, she emphasized the variety of experiences of women with these mental problems.

While Saunders stressed that childbirth and parenting were normal stresses that might produce symptoms of mental illness in some women, New York psychoanalyst Gregory Zilboorg was much more focused on the conflicts between what he identified as women's role (childbearing) and their work lives.[31] In his article, which was published in the same issue of the *American Journal of Psychiatry* as the one by Saunders, Zilboorg began with a two-page survey of millennia of physician thought about women's susceptibility to mental illness at the time of childbirth.[32] While Zilboorg accepted that psychoses in the time immediately after childbirth did not represent a specific form of illness, he did stress the role of pregnancy and childbirth in inducing mental illness. Zilboorg was much more definite in his arguments about the specific features that would lead to post-partum psychoses and insisted that women's frigidity was part of every case. (After questioning on this point by Zilboorg, Saunders said that some of women were frigid but felt better about their sexual relationships with their husbands after the birth of the child.)

Zilboorg had a clear idea in mind that women's embrace of their natural roles determined their ability to function and their susceptibility to mental illness. He described the outline of a prognostic factor in post-partum mental illness:

> The woman living unconsciously as a male and wanting to be male, submits to social demands to be a woman and gets married. She makes relative peace with herself in that she accepts one child, but this is what she does: The child is born. She usually gives the child to a housekeeper or to a nurse. For some reason or another, she has no

[29] E.R. Spaulding, "The Importance of Endocrine Therapy in Combination with Mental Analysis in the Treatment of Certain Cases of Personality Deviation," *American Journal of Psychiatry* 78 (1922): 375.
[30] E.B. Saunders, "Association of Psychoses with the Puerperium," *American Journal of Psychiatry* 85 (1929): 677.
[31] For more information on Zilboorg, see G. Mora, "Early American Historians of Psychiatry: 1910–1960," in *Discovering the History of Psychiatry*, ed. Mark S. Micale and Roy Porter (New York: Oxford University Press, 1994), 53–80.
[32] G. Zilboorg, "The Dynamics of Schizophrenic Reactions Related to Pregnancy and Childbirth," *American Journal of Psychiatry* 85 (1929): 733–67.

> milk, and she begins to play the part of the man, contributes to the support of the family. She doesn't conceive, sometimes, for a year, 2 years, 5 years and 10 years. Then she conceives accidentally and gives birth to a child and breaks into a schizophrenic reaction.[33]

For Zilboorg and others, women's biological functions were inextricably bound with their social and cultural roles of raising children and it was natural that a woman who had been pursuing her own career would develop a major illness in response to the conflict between career and biological function. Zilboorg's Freudian-based pronouncement was not so far away from Tomlinson's 1899 assertion about women's risks for insanity, in contrast to the observation by Saunders that most women tolerated their life transitions without difficulty.

Although psychiatrists were convinced that masculine and feminine roles were determinate, there was some fuzziness about how to define these roles. In the 1930s, the psychologist team of Louis Terman and Catherine Miles developed what they referred to as the "M–F Test" (short for "Masculine–Feminine Test") to help in making more "objective" measurements of individual adherence to masculine and feminine norms.[34] As two psychiatrists who used the M–F test to evaluate patients explained, the test was based on "the differences in interests and attitudes expressed by thousands of male and female subjects ranging from adolescence to old age. The responses of any person on this test therefore are compared with those of others of his sex and status (age, education, occupation) and his score represents his deviation from the mean."[35] Within the M–F test, normal masculinity and femininity were on a continuum, with the most masculine position belonging to male college athletes and the most feminine position belonging to female domestic workers (housekeepers). The scale was written from the values of positive 100 (indicating the greatest amount of masculinity) to negative 100 (indicating the greatest amount of femininity). Interestingly enough, policemen and firemen only ranked about a +40 on this scale.

Illinois psychiatrists Beulah Bosselman and Bernard Skorodin used the M–F test in 1940 to assess psychiatric patients with the rather circular reasoning that, "It might be expected that any group of people who deviate markedly from the norm in social behavior would show a deviation from the established standards of masculinity and femininity."[36] Not surprisingly, Bosselman and Skorodin found that psychotic men deviated to the feminine, while psychotic women deviated to the masculine. In particular, these psychiatrists asserted that psychotic men were more passive, while psychotic women were generally more aggressive. In the 1940s, "normal male" behavior involved an expectation about assertiveness and power, while "normal female" behavior meant softness and accommodation to others. Psychiatric patients did not necessarily fit these expectations, and their deviation from the expectation was both explained by and appeared to be a cause of their mental illness.[37]

In psychiatrists' numerous discussions of gender differences, they assumed that they knew what was normal for men and women and that deviation from the norm would be

[33] Ibid., 767.

[34] L.M. Terman and C.C. Miles, *Sex and Personality: Studies in Masculinity and Femininity* (New York: McGraw Hill, 1936).

[35] B. Bosselman and B. Skorodin, "Masculinity and Femininity in Psychotic Patients: As Measured by the Terman-Miles Interest-Attitude Analysis Test," *American Journal of Psychiatry* 97 (1940): 699.

[36] Ibid., 700.

[37] S. Robertson, "Separating the Men from the Boys: Masculinity, Psychosexual Development, and Sex Crime in the United States, 1930s–1960s," *Journal of the History of Medicine & Allied Sciences* 56 (2001): 3–35.

evidence—or possible cause—of mental illness. Within their theoretical systems, psychiatrists—in common with other scientists and physicians of the time—assumed that gender was based in nature. If nature was divided into male and female, then professionals further reasoned that the natural differences between men and women must be located within their reproductive functions.

Overreliance on hormones

Although psychoanalytic thinking came to play a central role in American psychiatry by midcentury, this framework was by no means incompatible with the rise of somatic therapies within psychiatric hospitals from the 1930s through the 1950s.[38] While much of the historical focus on somatic therapies has been on the various forms of shock therapy (insulin, metrazol, and electroconvulsive therapy or ECT), hormone treatments were a major early intervention for the treatment of hospitalized patients.[39] Hormone treatments in the 1920s and 1930s, which generally supplied estrogen in various forms to women, helped to shape how psychiatrists approached shock therapies in the 1930s and 1940s.[40]

In the first few decades of the twentieth century, physiologists and physicians were increasingly captured by the possibilities of the organs they identified as "ductless glands" and their products—hormones.[41] Hormones such as insulin had profound effects upon medical practice, and physicians speculated about the roles of hormones in both health and disease.[42] The sex hormones in particular appeared to have implications for mental health. As Philadelphia psychiatrists Edward Strecker and Baldwin Keyes explained in 1922, normal sex hormone functioning was necessary for both sex roles and for emotional regulation. Like many physicians during this time period, they used the example of the eunuch—a mostly theoretical figure from exotic tales of the Middle East, such as the *Arabian Nights*—to illustrate the problem of the absence of sex hormones: "It has been held for some time that the eunuch presents a psychophysical anomaly, due, at least in part, to the secondary pituitary activity which follows ablation of the gonads."[43] The specter of the eunuch—a man with no male reproductive capacity—permeated medical literature in this time period and promoted medical innovations such as rejuvenation procedures for older men.[44]

[38] On the ease of interaction of these apparently disparate systems of thought, see J.H. Sadowsky, "Beyond the Metaphor of the Pendulum: Electroconvulsive Therapy, Psychoanalysis, and the Styles of American Psychiatry," *Journal of the History of Medicine & Allied Sciences* 61 (2006): 1–25.

[39] See D.B. Doroshow, "Performing a Cure for Schizophrenia: Insulin Coma Therapy on the Wards," *Journal of the History of Medicine & Allied Sciences* 62 (2007): 213–43; N. McCrae, ""A Violent Thunderstorm": Cardiazol Treatment in British Mental Hospitals," *History of Psychiatry* 17 (2006): 67–90; E. Shorter and D. Healy, *Shock Therapy: A History of Electroconvulsive Treatment in Mental Illness* (New Brunswick: Rutgers University Press, 2007).

[40] For more on the history of estrogen use in medicine, see E.S. Watkins, *The Estrogen Elixir: A History of Hormone Replacement Therapy in America* (Baltimore: Johns Hopkins University Press, 2007).

[41] N. Oudshoorn, *Beyond the Natural Body: An Archaeology of Sex Hormones* (New York: Routledge, 1994).

[42] M. Bliss, *The Discovery of Insulin* (Chicago: University of Chicago Press, 1984).

[43] E.A. Strecker and B.L. Keyes, "Ovarian Therapy in Involutional Melancholia," *New York Medical Journal* 116 (1922): 30.

[44] C. Sengoopta, *The Most Secret Quintessence of Life: Sex, Glands, and Hormones, 1850–1950* (Chicago: University of Chicago Press, 2006); L.D. Hirshbein, "The Glandular Solution: Sex, Masculinity, and Aging in the 1920s," *Journal of the History of Sexuality* 9 (2000): 277–304.

Beverley Tucker, Medical College of Virginia Professor of Nervous and Mental Diseases, explained in 1922 that the ductless glands determined every aspect of human appearance and character: “In the process of physical development, whether a human being is to be large or small, fat or thin, a normal or a feminoid man, a normal or a masculinoid woman, white or brown or black largely depends upon the character and amount of his endocrine secretions. For these and other reasons the problem of personality may be only understood by the consideration of the individual’s internal secretions.”[45] In their descriptions of hormones and sex characteristics, physicians liberally mixed their assumptions about sex roles with their observations about hormonally based sex characteristics.

Physicians’ descriptions of the changes in puberty and their links to sex hormone changes helped to fix their ideas about the relationship between reproduction and gender roles. For example, in the early 1920s, Charles Gibbs, a professor at the Psychiatric Institute at Ward’s Island in New York (what would become the New York State Psychiatric Institute), studied the connection between sex characteristics—presumably those determined by sex glands—and mental illness. Gibbs examined a case series of patients with dementia praecox (or schizophrenia) and manic-depressive psychosis, and observed that these patients appeared to have the first manifestations of their illness at the same age at which they were developing sexual characteristics. For Gibbs, as for other physicians of his time period, sex characteristics (such as pubic hair) were inevitably connected with sexual preference—and so he suggested a connection in women among a “masculine factor” of hormone function (as evidenced by masculine hair patterns), homosexual tendencies, and manic-depressive psychosis. But while manic-depressive women might have an overabundance of the “masculine factor,” sexual development in dementia praecox appeared to be slowed, with several cases of feminized (less masculine) men and sexual immaturity in women. As Gibbs argued: “It is of biological significance in this group of cases, as in dementia praecox, that the character of the sexual behavior bears a close relation to the occurrence and degree of development of masculine hair and also to the age of onset of the psychosis; that a close relationship exists between these three factors.”[46] Thus Gibbs was able to construct a coherent argument that regular hormone production was necessary for appropriate masculine and feminine characteristics, and that a disruption of this function would lead to disrupted masculinity and femininity, themselves evidence of a psychiatric disorder.

In the 1930s, during a time when physicians were increasingly taking advantage of the isolation of reproductive hormones, psychiatrists began enthusiastically trying out hormone treatments for women patients with mental illness. Psychiatrists believed that it was obvious that since women experienced mental illness and appeared to have stresses around their life transitions (especially puberty, childbirth, and menopause), that hormone disruptions were the cause and that administration of hormones was the treatment of choice. Even when hormone treatments appeared not to have the benefit that investigators wanted to see, psychiatrists remained convinced that hormones were the key to mental health for women.

During this time period, psychiatrists were particularly enthusiastic about treatment of a specific disorder: involutional melancholia, or depression around the age of involution

[45] B.R. Tucker, “The Internal Secretions in Their Relationship to Mental Disturbance,” *American Journal of Psychiatry* 79 (1922): 260.

[46] C.E. Gibbs, “Sexual Behavior and Secondary Sexual Hair in Female Patients with Manic-Depressive Psychoses, and the Relation of These Factors to Dementia Praecox,” *American Journal of Psychiatry* 81 (1924): 53–4.

(defined as forties and fifties for women, coinciding with menopause, but in the fifties and sixties for men whose life transition was less clear). Involutional melancholia had been described by Kraepelin at the end of the nineteenth century, but he eliminated it from his nosology in the early twentieth century because he decided that it was not, in fact, a specific illness.[47] American psychiatrists used the diagnosis of involutional melancholia and increased their attachment to it, despite Kraepelin's work, in the middle decades of the century because it provided an ideal model for mental illness, particularly in women. In addition, psychiatrists' focus on menopause was in step with other medical professionals' increasing interest in this stage of life.[48] In the psychiatric model of illness around the climacteric, mental illness was due to a decline in hormones, especially estrogen, and the treatment was hormone replacement. The diagnosis of involutional melancholia died in the late 1970s and early 1980s with the rise of the diagnosis of major depressive disorder.[49]

Boston Psychopathic Hospital psychiatrists Karl Bowman and Lauretta Bender explained in 1932 that it made sense to try to treat involutional problems with hormone treatment. Although they did not advocate trying to reinstate menses,

> it is not unreasonable to suppose that the climacteric failure of the normal ovarian function may carry with it some abnormality in the involutional process, or some difficulty of the organism to adjust to the involution, which may precipitate visceral disturbances and associated symptoms. These may be met best, at least temporarily, until adjustments are more complete, by the use of organotherapy. The specific female hormone that is now know experimentally to be able to replace the normal ovarian function in producing the sex cycle, offers one obvious possibility.[50]

Indeed, psychiatrists thought the idea of hormones to treat mental illness around women's life changes so obvious that they persisted despite decades of uninspiring results.

In 1940, New York psychiatrist Herbert Ripley and endocrinologist Ephraim Shorr collaborated with pathologist George Papanicolaou on the treatment of involutional melancholia with estrogen. This group of physicians explained that estrogen treatments for women with mental symptoms in menopause were quite popular and argued that more needed to be understood about the relationship between mental symptoms and menstrual function. Papanicolaou's contribution to this effort was to use vaginal smears to trace objectively the effects of hormones—a technique that would earn him eternal fame among woman for the procedure that bears his name, the Pap smear.[51] Although the New York group was unable to demonstrate that estrogen actually helped patients with severe illness, they were captivated by the idea that administration of different levels of hormone in different patients could lead to changes in the smears.[52] Indeed, while Papanicolaou's group abandoned efforts to treat patients with hormones (based on their tepid results), they remained excited about the possibility of tracking changes in mental illness through the use

[47] E. Kraepelin, *Clinical Psychiatry* (New York: Macmillan, 1907).
[48] J.A. Houck, *Hot and Bothered: Women, Medicine, and Menopause in Modern America* (Cambridge: Harvard University Press, 2006).
[49] S.W. Jackson, *Melancholia and Depression: From Hippocratic Times to Modern Times* (New Haven: Yale University Press, 1986).
[50] K.M. Bowman and L. Bender, "The Treatment of Involution Melancholia with Ovarian Hormone," *American Journal of Psychiatry* 88 (1932): 869.
[51] M.J. Casper and A.E. Clarke, "Making the Pap Smear Into the "Right Tool" For the Job: Cervical Cancer Screening in the USA, Circa 1940–1995," *Social Studies of Science* 28 (1998): 255–90.
[52] H.S. Ripley, E. Shorr, and G.N. Papanicolaou "The Effect of Treatment of Depression in the Menopause with Estrogenic Hormone," *American Journal of Psychiatry* 96 (1940): 905–13.

of smears. As Ripley and Papanicolaou explained in 1942: "Since ancient times there has been an appreciation of the fact that menstrual irregularities occur in association with emotional disturbances."[53] Vaginal smears appeared to provide evidence of this relationship and a suggestion for treatment.

Many psychiatrists were convinced that hormone treatment provided the answer for women with mental illness and enthusiastically reported extraordinary success rates with the possibility of expanding treatment to women outside hospitals.[54] While some psychiatrists emphasized the role of hormone deficits in involutional melancholia, others postulated that women with schizophrenia were also low in estrogen.[55] Thus, while hormone administration made sense across a broad spectrum of hospitalized women during the 1930s and 1940s, some observed at the time that hormones were not especially effective. Two psychiatrists from Omaha, Nebraska, complained in 1944 that, "Thousands of patients with psychiatric disorders occurring in middle age and in involutional and presenile periods of life are constantly being treated with estrogenic substances….It has been our experience that estrogenic therapy has no value in these disorders; valuable time and large sums of money are needlessly lost; and eventually most of these patients require adequate psychiatric therapy for lasting recovery."[56] The adequate therapy described by the Nebraska psychiatrists was ECT.

What is striking in hindsight about psychiatrists' attachment to hormone treatments in the 1930s and 1940s was not just that they conceptualized mental illness as a state of hormone deficiency. In addition, psychiatrists' propensity to view hormone problems as a major factor in mental illness speaks to their perception that women were a significant part of their patient populations (when hospital census data of the time reflects a larger proportion of men).[57] The professionals who, like the Nebraska psychiatrists, criticized hormone treatments went on to new therapies with the same patient populations. Women comprised a significantly larger proportion of the patient population who received convulsive therapies (especially ECT).[58] Further, they also predominated in medication trials of new psychiatric drugs by the 1950s and beyond.[59] The opportunity to treat women

[53] H.S. Ripley and G.N. Papanicolaou, "The Menstrual Cycle with Vaginal Smear Studies in Schizophrenia, Depression and Elation," *American Journal of Psychiatry* 98 (1942): 567.

[54] C.C. Ault, E.F. Hoctor, and A.A. Werner, "Theelin Therapy in the Psychoses" *Journal of the American Medical Association* 109 (1937): 1786–8.

[55] See for example, C.C. Ault, E.F. Hoctor, and A.A. Werner, "Involutional Melancholia: Additional Report," *American Journal of Psychiatry* 97 (1940): 691–4; A.A. Werner, E.F. Hoctor, and C.C. Ault, "Involutional Melancholia: A Review with Additional Cases," *Archives of Neurology and Psychiatry* 45 (1941): 944–52; H.A. Sears et. al., "Blood Estrin Level in Schizophrenia," *American Journal of Psychiatry* 93 (1937): 1293–303.

[56] A.E. Bennett and C.B. Wilbur, "Convulsive Shock Therapy in Involutional States After Complete Failure with Previous Estrogenic Treatment," *American Journal of the Medical Sciences* 208 (1944): 170.

[57] Bureau of the Census, *Statistical Abstract of the United States, 1942* (Washington, DC: United States Government Printing Office, 1943), 95–6.

[58] See for example, J.A. Bianchi and C.J. Chiarello, "Shock Therapy in the Involutional and Manic-Depressive Psychoses," *Psychiatric Quarterly* 18 (1944): 118–26; E. Davidoff and A. Raffaele, "Electric Shock Therapy in Involutional Psychoses," *Journal of Nervous and Mental Disease* 99 (1944): 397–405; P. E. Huston and L.M. Locher, "Manic-Depressive Psychosis: Course When Treated and Untreated With Electric Shock," *Archives of Neurology and Psychiatry* 60 (1948): 37–48; I.L. Fishbein, "Involutional Melancholia and Convulsive Therapy," *American Journal of Psychiatry* 106 (1949): 128–35; See also, J.T. Braslow, *Mental Ills and Bodily Cures: Psychiatric Treatment in the First Half of the Twentieth Century* (Berkeley: University of California Press, 1997), 95–124.

[59] L.D. Hirshbein, "Science, Gender, and the Emergence of Depression in American Psychiatry, 1952–1980," *Journal of the History of Medicine & Allied Sciences* 61 (2006): 187–216.

with hormones in the 1920s and 1930s both reflected and reinforced psychiatrists' gendered views of their patients and their tendency to see women as particularly deserving of help.[60]

So what can we learn from psychiatric encounters with sex and gender in the first half of the twentieth century? While it is easy to critique science and medicine from the past, it is also important to recognize that investigators from long ago were just as sure as we are today about the scientific merit of their views. But what will historians of the future say about what we are doing now? We still face the challenge of trying to determine sex differences without certainty that what we see is really sex. We still look at disease incidence by sex and interpret differences based on assumptions that later may turn out to be more about social and cultural factors rather than biology. We still acknowledge social and cultural factors without enough of an appreciation for how they change over time. And we remain preoccupied with women's sex hormones and their relationship to mental disease though such diagnoses as Premenstrual Dysphoric Disorder.[61]

Although much of this paper has used a critique of the past to inform the present and the future, we can also be inspired by insight from a woman psychiatrist over a century ago. In 1895, Clara Barrus, Assistant Physician at Middletown State Hospital in New York, argued that physicians of her time probably made too big a deal about the gynecological causes of mental disease. As she pointed out: "The causes of insanity in women may be, nay, they probably are, as varied, and many of them identical with, the causes of insanity in men; for we have always to remember that both before and after one is a wife and mother (and consequently subjected to the forms of puerperal and lactational insanity), one is a human being, and the elements that enter into the causation of mental aberration in women will develop along the line of the experiences and inheritances that come to her as a human being, *with the addition* of those which come to her as a human being of the female sex."[62] While Barrus lived at a time when the concept of sex differences seemed to structure much of society and medicine, she was able to point out that sex may not in the end be that determinate amidst the backdrop of common human experiences.

In our enthusiasm for finding differences between men and women with regard to mental illness, have we perhaps overstated their importance? Have we let social, cultural, and power assumptions color our views of men and women and psychiatric disease? And how will we know if we have *really* established differences due to biology? These questions affect not only how we investigate possible biological differences between men and women but also how psychiatry will look in the future. As these historical examples indicate, much of psychiatry's past has been wrapped up in observations about sex differences, psychoanalytic interpretations of gender roles, and speculation about the effects of hormones. We need to develop a critical awareness of both the ways in which researchers frame questions and the implications for psychiatry as a whole. We may never uncover the real biological differences between men and women in our lifetimes, but we can continue to critically evaluate our current theories and practices as we go forth into the future.

[60] Joel Braslow and Leslie Starks have pointed out that the larger number of women treated with lobotomy was due to the perception that women could better benefit from the procedure. J.T. Braslow and S.L. Starks, "The Making of Contemporary American Psychiatry, Part 2: Therapuetics and Gender Before and After World War II," *History of Psychology* 8 (2005): 271–88.

[61] P.J. Caplan, *They Say You're Crazy: How the World's Most Powerful Psychiatrists Decide Who's Normal* (Reading, Mass.: Addison-Wesley Publishing Company, 1995).

[62] C. Barrus, "Gynaecological Disorders and Their Relation to Insanity," *American Journal of Insanity* 51 (1895): 477, emphasis in the original.

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