

Sexual Spectra:
Biology and Sexual Politics in Europe, 1896–1933

Tom Butcher
Wiesbaden, Germany

BA, Washington University in St. Louis, 2010
MA, University of Virginia, 2013

A Dissertation presented to the Graduate Faculty
of the University of Virginia in Candidacy for the Degree of
Doctor of Philosophy

Department of History

University of Virginia
August 2018

*For Mom, Dad, and Hope
in tremendous gratitude
for everything*

TABLE OF CONTENTS

Abstract	iv
Acknowledgements	v
Notes on Terminology and Other Minutiae	ix
Introduction	
Binary and Spectral Sex.....	1
Chapter 1	
From <i>Geschlecht und Charakter</i> to Sexual Liberation: On Unexpected Agreement between Otto Weininger, Rosa Mayreder, and Anna Rüling.....	30
Chapter 2	
Sexual Chemistry: Charles-Edouard Brown-Séquard, Eugen Steinach, and the Endocrinological Revolution.....	101
Chapter 3	
Plastic Sex, Binary Gender: Eugen Steinach's Failed Cures for Homosexuality and Old Age.....	147
Chapter 4	
Sexual Theory, Political Praxis: Magnus Hirschfeld and the Theory of Sexual Intermediaries.....	203
Conclusion	265
Bibliography	274

Abstract

In contrast to those who would argue that conceptions of non-binary sex are new, historians of science and gender have shown that definitions of biological sex are just as subject to historical change as any other human idea. Although scholars disagree on when and why the ‘binarist’ view emerged, they generally agree that by the nineteenth century the idea of biological sex as a rigid binary had become a standard assumption of medical knowledge, and that this assumption has persisted to recent times. However, I argue that this historical narrative leaves little room for attending to the fact that some nineteenth- and twentieth-century thinkers conceived of biological sex in non-binary terms. Consequently, such thinkers have tended to be either ignored or studied in isolation from each other, creating the impression that their deviations from binary sexual thinking were abnormalities. In this dissertation I challenge this view through a history of conceptions of biological sex showing that the idea of sex as a (non-binary) spectrum was quite widespread in late-nineteenth- and early-twentieth-century Europe. Taking recent developments in the study of gender and sexuality as a starting point, I also argue for the importance of biological sex as a useful category of historical analysis. Indeed, my research suggests that these thinkers of a century ago, and their conceptions of scientifically-grounded sexual fluidity, might well be relevant for reconceptualizations of biological sex in gender and trans theory today.

Acknowledgements

This dissertation is the product of many years of education, training, research, and writing, and it could not have been accomplished without the intellectual insight and emotional support of countless people over the last several years. It is inevitable that some deserving names will not be mentioned in these paragraphs: I apologize in advance for any omissions.

Portions of this research that led to this dissertation have been funded by Departmental Fellowships, Huskey Travel Fund Grants, and a Summer Research Travel Grant from the History Department of the University of Virginia; additional funding has been provided by the Dumas Malone Graduate Research Fellowship and the Doris G. Quinn Foundation. For their assistance in locating and preserving historical documents, I would like to thank the archivists at the Kinsey Institute; at the Landesarchiv Berlin; at the Magnus-Hirschfeld-Gesellschaft; at the New York Academy of Medicine; at the Universität Wien; and at the Wienbibliothek im Rathaus.

The first big thanks go to my advisor, Allan Megill, who served in the last eight years not only as my greatest teacher and most ruthless editor, but also as an intellectual and pedagogical inspiration. It is my greatest hope that I will be able to follow in his footsteps. I owe enormous thanks as well to the other members of my committee, Alon Confino, Cori Field, and Rita Felski, for multitudes of advice over the last several years. They have given me aid on my dissertation and other work, on professional development, and generally on how to exist as a complete human within the sphere of academia. I am similarly grateful to several other faculty members of the UVa History Department, notably Fahad Bishara, Max Edelson, Kyrill Kunakhovich, Jim Loeffler, Sarah Milov, Christy Mobley, Karen Parshall, and Jeff Rossman, for advice, friendship, and inspiration over the last several years.

I first became interested in history, particularly from an interdisciplinary perspective, during my undergraduate years at Washington University in St. Louis. There I was fortunate enough to fall into a wonderful major program known as the Interdisciplinary Project in the Humanity, which my friends and I joked ought to be regarded as majoring in “pre-academia.” I will be eternally grateful for the tireless leadership of Joe Loewenstein, as well as the exceptional teaching of Jami Ake, Russell Alt-Haaker, Charly Coleman, Matt Erlin, Steve Hause, Gerald Izenberg, Jennifer Kapczynski, and Lynn Tatlock, and also for my undergrad thesis advisor, Erin McGlothlin. Special thanks as well to Amy Lehman for being the glue that held everything together.

Writing a dissertation in the humanities can often be lonely work, but I am fortunate to have a wide network of friends who have helped me to stay encouraged, sane, and happy. From back home, my greatest thanks to Geoffrey Brewer, Cameron Brosky, Liz Browne, Morgan Browne, Pat Cullinan, John Flowers, Lawrence Field, Marlo Gawey, Madeleine May, Blake Marfechuck, Jack Millaway, and Jacob Piland for keeping our friendships alive across time and space, and for introducing me to the great social art of fantasy football. From college (and college-adjacent), I remain eternally grateful to Leah Blake, Andrew Bochner, Risa Bochner, Patti Greenbaum, Jordan Jurcyk, Dana Landau, Daniel Marcus, Andy McDonald, Kim McDonald, Reed Otten, Hannah Taylor, Ted Simmons, Kate Simmons, and Nora Willgren for late nights, couches to sleep on, and, among many, many other things, Mario Kart and Jungle Tennis. Also from college I will treasure forever the friendship of Emma Cohen, Shelby Carpenter, Erika Deal, Deva Estin, Whitney Howland, Laura Jensen, Evan Kuhn, Sarah Michalczuk, Stephen Pulvirent, Hallie Tuchman, Emily Silber, and others in the IPH community for helping to foster (and to laugh at) my love of interdisciplinary learning. From graduate

school, I have been lucky enough to know the intellectual companionship, friendship, and trivia excellence of Ryan Bibler, Katie Boguszewski, Jesse Bordwin, Willa Brown, Chris Cornelius, Anne Daniels, Ben Davison, Katelyn Durkin, Evan Farr, Lauren Hauser, Trevor Hiblar, Alec Hickmott, Mary Hicks, Austin Hetrick, Zach Hoffman, Ellie Kaknes, Derek King, Emily Moore Knudsen, Severen Knudsen, Evan McCormick, Cody Perkins, Sarah Walls Perkins, Cait Terry, John Terry, Emily Senefeld, and Emily Sydnor. And in the last year or two a whole new group of friends have extended their love and support and frequent board game partnership to me: in this list belongs James Asher, Jesse Bordwin, Alyssa Collins, Katelyn Durkin, Austin Hetrick, Eva Latterner, Lee Surma, and Ethan Reed.

And then there is the greatest friend I have met, a woman whose love and intellect amaze me every day. My wonderful partner Sarah Berkowitz played a larger role in the completion of this project than any one other person, save myself and my advisor. I cannot possibly imagine the dismal state that this dissertation would be in were it not for her amazing insight, frequent suggestions, and her ever-ready willingness to help me tear apart and rebuild my ideas, re-establishing them upon firmer footing. Moreover, Sarah has also blessed me with the friendship of her family, who have given me more professional advice, beautiful hikes, and good meals than I have any right to deserve. But the truly excellent thing about the debt that I owe Sarah for her help with this dissertation is that I get to even things out by reading and discussing her own amazing work. Never has a favor been so enjoyable to repay.

As the long lists of names in these paragraphs attest, I have been lucky to know and be inspired by a large number of people over the course of my life, and this dissertation could not exist without their help and support. Single-authorship is perhaps the greatest fiction of

academia; in a just world that honored the properly nuanced precision that academics claim to value, all of these names would appear alongside mine on the title page. Thank you, one and all.

But, of course, the biggest thanks go to my wonderful, amazing, superlative family. Thank you to my mom Colleen, for teaching me importance of deep intellectual inquiry, and for serving as a feminist role model for my fragile young male brain. Thank you to my dad Mac, for teaching me the importance of hard work, and for serving as a model of what a good man does. Thank you to my sister Hope, who never ceases to inspire me with her intelligence, courage, and love. Thank you to my grandparents, who always made me feel special. Thank you to my aunts, uncles, and cousins, who always made me feel lucky to be part of the only club I'd ever want to belong to. But above all, thank you thank you thank you to Mom, Dad, and Hope. This dissertation is dedicated to you. Prost!

Notes on Terminology and Other Minutiae

As is often the case with academic work on sex, gender, and sexuality, some of the terminology that I use in this dissertation may seem foreign to those who are not already familiar with the literature. Even for those who regularly study such subjects, some of the specific ways in which I use certain terms may seem unusual. In the interests of clarity, I offer the following definitions, some of which will be elaborated further in the introduction:

Sex/Gender/Sexuality Terminology

- *(Biological) Sex*: A biological designation abstracted from certain pieces of one's physiological data, which is frequently but not always associated with the reproductive organs a person possesses. Often thought of in binary terms (male and female), although there is no necessary reason why there could not be other sexual classifications. The specific physiological characteristics implied by a given sexual classification are historically and culturally contingent. Throughout this dissertation, it may be generally assumed in cases of contextual confusion that when I use the word 'sex,' I mean it in the sense presented here, rather than signifying the *act* of sex, or any other meaning commonly associated with the word. When I wish to particularly emphasize the role of biology in a given conception of sex, I will use the term 'biological sex'; however, my use of this expanded term is not essentially different from my use of 'sex' *simpliciter*.
- *Gender*: A psychological and socio-cultural phenomenon that describes the sexual identity that one feels oneself to possess, as well as the ways in which that identity is expressed to and recognized by others.
- *Sexuality*: A designation (often an identity) concerning preferences in sexual activity (including, but not limited to, the preferred sex or gender of one's partner).

- *Man/woman vs. male/female*: In general, I use *man* and *woman* to designate genders and use *male* and *female* (as nouns) to designate sexes. Unfortunately, the fact that ‘male’ and ‘female’ are also adjectives means that this usage can become complicated—for example: ‘This man possesses a male gender.’ In general, I try to avoid such usage as much as I can, and when it is unavoidable, I hope that the context will indicate whether I am referring to sex or to gender.
- *Cisgender* (or *cis*): People who are *cisgender* feel that their gender is congruent with their sex (typically, men who are males and women who are females).
- *Transgender*: People who are *transgender* feel that their gender is incongruent with the sex that they were assigned at birth.
- *Trans*: An umbrella term (sometimes written as *trans**) referring to all people who are transgender, transsexual, or who have any number of other alternative or non-traditional gender identities.
- *MTF* and *FTM*: These abbreviations for ‘male-to-female’ and ‘female-to-male’ designate the most common categories of trans people. *MTFs* are people assigned male at birth who are women by gender, while *FTMs* are people assigned female at birth who are men by gender. Note that these terms have nothing to do with whether a given person has pursued medical procedures to change his or her sexual biology. Note also that there are other ways to be trans than simply *MTF* and *FTM*; these are just the most common.
- *Intersex*: This term refers to anyone who is unable for any reason to be distinctly classified as biologically male or female (according to present-day standards). Causes of intersexuality include sexual aneuploidy (sex chromosome configurations other than XX or XY), ambiguous external genitalia, and atypical hormone balances, among others.

Medical/Anatomical Terminology

- *Gamete*: A sexed haploid cell that is capable of sexual reproduction. By merging with another *gamete* of a different sex, a fertilized *zygote* can be created. The female *gamete* is the ovum or egg cell; the male *gamete* is the spermatozoon.
- *Gonad*: A sexed reproductive gland, which produces *gametes* as well as gonadal hormones, such as testosterone and estrogen. The male *gonad* is the testicle or testis; the female *gonad* is the ovary.
- *Secondary Sexual Characteristics (SSCs)*: Physical characteristics that develop during puberty. Many are associated either with one gonad or the other, and thus are classified as ‘female’ or ‘male.’ Examples include larger (‘female’) breasts and thicker (‘male’) facial hair.

Historical Terminology

- *Sexual Inversion / Contrary Sexual Feeling*: In the psychological jargon of the late nineteenth and early twentieth centuries, these two terms referred to behavior that today would generally be referred to as homosexual. These terms connote the idea that a patient’s preferences have become inverted from (or contrary to) the way they ought to be (according to the psychologist). The term was also occasionally used to refer to those who would today be referred to as crossdressers or trans.
- *Urning* (or *Uranian*): This term, coined by Karl Heinrich Ulrichs, refers to a person with a male body but a female soul, including female sexual desire. Like *invert*, it refers to a person who would today most likely be classified as homosexual; however, *Urning* was

created as a positive, non-medicalized means of referring to such people. The female equivalent term is *Urningin* (sometimes *Urninde*).

- *Hermaphrodite*: In the medical terminology of the late nineteenth and early twentieth centuries, the term *hermaphrodite* (particularly when specified as a ‘true’ hermaphrodite) referred specifically to a person who possessed both male and female gonads. However, the word was also used in a number of broader senses, particularly in non-medical contexts, to connote the idea of sexual intermediacy. Today, such people would be more properly referred to as *intersex*.
- *Pseudohermaphrodite*: In contrast to a ‘true’ *hermaphrodite*, a *pseudohermaphrodite* was a person who possessed only one type of gonad, but displayed ambiguous genitalia, ‘mixed’ secondary sexual characteristics, or other physical characteristics associated with the sex ‘opposite’ to their gonads. As with *hermaphrodites*, today such persons would fall under the umbrella of *intersex*.
- *Transvestite*: This word, coined in 1910 by Magnus Hirschfeld, refers to those who feel a deep-seated need to wear the clothing of the ‘opposite’ sex.

On Pronouns

In this dissertation, I attempt to refer to individuals with the pronouns that they seem to have preferred for themselves at the time. These matters are not always easy to determine, and often my only sources of information are doctor’s notes—which hardly offer an unbiased account of the patient’s personal feelings. However, I have done my best to operate according to what I believe the wishes of the person in question would be.

On the Use of Quotation Marks

I use single-quotation marks to indicate ‘scare’ quotes and other words that I wish to set off from the regular text. This should prevent such words from being mistaken for textual quotations.

Actual quotations will be rendered in standard American style—with double quotation marks at the beginning and end, and single marks for internal quotations.

On Translations

Most of the primary sources used for this dissertation were written in German. When a published English translation exists, I have generally opted to quote (and cite) it, with some modifications in the wording being made as necessary. I have produced my own translations in cases where no published translation is available, or where I did not wish to use the published translation at all.

In all such cases, I provide the original German (or, occasionally, French) text in the footnotes. If the footnote citation for a foreign-language source does not contain the original text, it may be assumed that I am quoting the corresponding published English translation. For some sources where I routinely switch back and forth between providing my own translation and quoting a published translation, I provide in my citations a page reference for the original source, followed in brackets by the corresponding page of the published translation.

On Emphasis

Unless otherwise mentioned, all emphasis in quotations may be assumed to exist in the original.

German texts from this period usually showed emphasis with wide letterspacing

(*g e s p e r r t e r T e x t*), which I render in this dissertation as italicized text. German authors and publishers from this time emphasized text according to principles that might seem unusual to American readers today (for example, in scientific texts, names of other scientists are almost

always emphasized). I prefer to keep all such emphasis, rather than to impose my own selection about what is 'actually' important.

SEXUAL SPECTRA

**BIOLOGY AND SEXUAL POLITICS IN
EUROPE, 1896–1933**

So true is it that unnatural generally only means uncustomary,
and that everything which is usual appears natural.

John Stuart Mill, *The Subjection of Women*

And it's so much less confusing
When lines are drawn like that,
When people are either...

Laura Jane Grace, *Against Me!*

Introduction

Binary and Spectral Sex

Perhaps it is sexual difference that now needs to be problematized so that gender can be freed to do its critical work.

Joan Scott¹

Great Guinea Pigs of Intermediacy

In the end it was the guinea pigs that showed the way. In second decade of the twentieth century, these unsuspecting, fluffy rodents helped to prompt a remarkable transformation in the understanding of sexual biology. Thanks to their great sacrifice the endocrinologist Eugen Steinach was able to publish the first convincing evidence that gonadal hormones exist, and that the biological sex of one's birth does not have to be the biological sex of one's life. Steinach's experiment was simple but imaginative: male and female guinea pigs were castrated or spayed shortly after birth, and then implanted with the gonad 'opposite' to the sex with which they were born. The experiment was a smashing success. The spayed female guinea pigs implanted with testicles grew to sizes expected of uncastrated males and developed other male secondary sexual characteristics, such as rough hair. Similarly, castrated males implanted with ovaries grew only to sizes expected of unspayed females and developed other female secondary sexual characteristics, such as enlarged and even lactating mammarys. In the control group, guinea pigs that had been castrated or spayed, but that did not receive *new* gonads, grew to an intermediary size between that of 'normal' males and females. Steinach triumphantly proclaimed that his experiment had produced "masculized" female guinea pigs and "feminized" males.² He believed

¹ Joan Wallach Scott, "Gender: Still a Useful Category of Analysis?," *Diogenes* 57, no. 1 (February 2010): 7–14, at 12.

² Eugen Steinach, "Willkürliche Umwandlung von Säugetier-Männchen in Tiere mit ausgeprägt weiblichen Geschlechtscharakteren und weiblicher Psyche," *Pflügers Archiv für die gesammte*

that he had achieved a major break-through; as he saw it, this experiment would finally confirm his longstanding suspicion that “the sexual life of every creature—whether in the male, female, hermaphrodite, or some other transitional, that is, intersexual, form—is determined by the hormone-producing sex glands, and by the quality, and quantity, of the hormone they furnish.”³

The implications of Steinach’s research reached far wider than a simple consideration of the physiological etiology of rodent sexual difference. Since the Enlightenment, Europeans had generally considered biological sex to be a matter of a simple, absolute binary. Males were males, females were females, and that was that. Steinach’s research implied that things were not so simple. If the balance of hormones was the key to sexual difference, then this meant that sex took the form not of a binary opposition, but rather of a spectrum. As Steinach himself wrote in his summary of his life’s work, “even in nature the line of demarcation between the sexes is not as sharp as is generally taken for granted. Absolute masculinity or absolute femininity in any individual represents an imaginary ideal. A one hundred percent man is as non-existent as a one hundred percent woman.”⁴

Steinach was not the only thinker of his time to conceive of sex in this manner. The period from the publication of Magnus Hirschfeld’s pamphlet *Sappho and Socrates* in 1896 to the rise of the Nazi Party in 1933 saw the proliferation of a ‘spectral’ conception of sex in a variety of intellectual circles, including biology, medicine, philosophy, and feminism, and also in the sphere of homosexual activism. This dissertation investigates how major thinkers of this time

Physiologie des Menschen und der Thiere 144 (1912): 72–108; Eugen Steinach, “Feminierung von Männchen und Maskulierung von Weibchen,” *Zentralblatt für Physiologie* 27, no. 14 (October 4, 1913): 717–23.

³ Eugen Steinach, *Sex and Life: Forty Years of Biological and Medical Experiments* (New York: The Viking Press, 1940), 8.

⁴ *Ibid.*, 7.

used and interpreted new discoveries in science and medicine to advocate for a ‘spectral’ conception of biological sex, as well as the ways that these thinkers sought to use their respective conceptions of sexual spectra to play a part in creating new social and political realities.

Although these thinkers differed in many respects in their understandings of biological sex, all held the belief that a strict binary of ‘male’ and ‘female’ does not do justice to the facts. Instead, they posited a potentially infinite number of intermediary sexes occupying the positions between ‘male’ and ‘female’ ideal types.

I make three central claims in this dissertation. First, I claim that a conception of spectral sex, which is by definition non-binary, was significantly more common in the late-nineteenth and early-twentieth centuries than typical narratives about binary conceptions of sexual biology might lead us to believe. A conception of sexual spectrality was, moreover, often linked to a conception of sexual malleability—that is, to believing that it is possible to change one’s sex. Although I examine in detail only four or five authors in this dissertation, there is sufficient evidence to indicate that the ideas of sexual spectra became somewhat widespread—in generalities, if not always in specifics—in the early twentieth century. This is not to say that the idea of sexual spectrality became the norm in this time; it is merely to say that such an idea was far less of an aberration than we might expect. Indeed, given that almost all the authors whom I examine in this dissertation were aware of each other, one could argue that ideas about sexual spectrality formed an intellectual network of sorts.

Second, I claim that this new conception of sex was not a ‘neutral’ scientific opinion (as if such a thing could even exist), but rather was always understood with reference to social and political values. Such a connection is particularly obvious in the figure of Magnus Hirschfeld, whose personal motto was *per scientiam ad justitiam* (through science to justice). However, it

can also be seen in the work of Steinach, the most ostensibly politically neutral thinker considered in this study. Much of his pioneering research into sexual mutability is only plausible in the context of traditional gender roles, and he ultimately applied his research toward the social reinforcement of such roles. As this last example indicates, it should not be assumed that there was any necessary correlation between conceiving of sex as a spectrum and a progressive politics of greater acceptance for the disempowered. While this new idea of sex offered a powerful vocabulary for the legal and cultural emancipation of women and sexual minorities, a spectral notion of sex was also adopted by various culturally conservative thinkers, who found within it a way of reinforcing the gender hierarchies common to early-twentieth-century Central Europe.

Nevertheless, in certain ways the spectral conception of sex adopted by the authors I examine is more similar to many present-day conceptions of sex than it is to those that came immediately before and after the period in question. My third claim in this dissertation is that these new ideas of sexual spectra offer a crucial insight into the cultural background of European thought at this time. Radical transformation in the conception of biological sex did not betoken merely a scientific advance; it also went to the heart of sex and gender relations among Europeans at the time. This relatively short period of history produced a conception of sex that can appear as something of an oasis in intellectual history. For at least the previous century or two, sex had mostly been conceived of as a static binary between male and female. To propose a sexual spectrum was to comment upon the sexual order of European society.

In addition to these substantive claims, I also advance a methodological claim in this dissertation, namely, that humanists in general and historians specifically ought to take greater

account of biological sex both as a historical subject and also as a “useful category of historical analysis,” to adopt Joan Scott’s justly famous phrase.⁵ It is to this argument that I now turn.

Bringing Sex Back

Although the word ‘gender’ has long existed as a technical term in the vocabularies of grammar and linguistics, the present-day sociological and psychological meaning of the term is relatively new. In 1955 the sexologist John Money became the first academic to propose a non-grammatical meaning for ‘gender’ when he introduced his term *gender role*.⁶ This new term would “signify 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, respectively.”⁷ Nine years later, the psychiatrists Robert Stoller and Ralph Greenson introduced the complementary term *gender identity*. Today, most uses of the word ‘gender’ combine Money’s idea of sociological gender performance with Stoller and Greenson’s conception of psychological gender identity. However, the term was slow to catch on. It was not until ‘gender’ became widely adopted by feminist authors in the late seventies and eighties that the term came into widespread use in academic and eventually also popular writing.⁸

⁵ Joan Wallach Scott, “Gender: A Useful Category of Historical Analysis,” *The American Historical Review* 91, no. 5 (December 1986): 1053–75. For a historical and retrospective analysis of Scott’s article, see Joanne Meyerowitz, “A History of ‘Gender,’ ” *The American Historical Review* 113, no. 5 (December 2008): 1346–1356.

⁶ David Haig, “The Inexorable Rise of Gender and the Decline of Sex: Social Change in Academic Titles, 1945–2001,” *Archives of Sexual Behavior* 33, no. 2 (April 2004): 87–96, at 91.

⁷ John Money, “Hermaphroditism, Gender, and Precocity in Hyperadrenocorticism: Psychologic Findings,” *Bulletin of the Johns Hopkins Hospital* 96 (1955): 253–64, at 264.

⁸ Haig, “Rise of Gender,” 94.

For those feminists, *gender* proved to be a remarkably useful concept. *Sex* was a biological term, and carried with it implications of fixity and determinism; *gender*, on the other hand, was socio-cultural in character, and it could be used to highlight contingencies that had already become commonplace in feminist philosophy—for example, in Simone de Beauvoir’s famous declaration that “one is not born, but rather becomes, a woman.”⁹ Additionally, the concept of gender allowed certain thinkers who by the nineties were referred to with increasing frequency as *gender theorists*—among them, Judith Butler, Donna Haraway, and Joan Scott—to push beyond the binary categorization seemingly imposed by sex.¹⁰ Although the terms ‘man’ and ‘woman’ seemed sufficient to describe a vast majority of the population, the idea of gender as a performance and as an identity meant that, in theory, an infinitely large number of genders could exist, having no necessary correlation with the sexual biology of the individual in question.¹¹

It was also in or about the early nineties that academics and others writing about such topics came to refer with regularity to a new trifold distinction between *sex*, *gender*, and *sexuality*, with the last term referring to a person’s preferences in sexual activity. Previously, *sexuality* had tended to be bundled together with *gender*—for example, John Money wrote that a

⁹ Simone de Beauvoir, *The Second Sex*, trans. H. M. Parshley (1949; New York: Knopf, 1953), 267.

¹⁰ Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity*, 2nd ed. (1990; New York: Routledge, 1999); Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991); Scott, “Gender.”

¹¹ Today the term “genderqueer” is often, although not exclusively, used as an umbrella term that includes everything besides cisgendered, heterosexual men and women. Some examples of these non-binary genders include *agender*, *androgynous*, *bigender*, *pan-* or *polygender*, *third gender*, and *trans**.

gender role “includes, but is not restricted to, sexuality in the sense of eroticism.”¹² However, sexologists, gender theorists, and other such researchers increasingly came to regard sexuality as something that could only be correlated with, and never determined by, the sex and the gender of the person in question. With some modification, the *sex/gender/sexuality* tripecta has been a mainstay of academic and popular writing about sexual subjects for the last thirty years.¹³ This ‘holy triangle’ has proved itself remarkably durable in that time, and it has helped to produce valuable research. In all likelihood it will be replaced someday, but at the moment its position as a foundational truth of many fields in the humanities and social sciences, including gender studies and sexuality studies, seems secure.

However, note a curious facet of the previous sentence: it invokes gender studies and sexuality studies, but not sex studies. Those sex studies that do exist mostly concern themselves with the *act* of sex, rather than with the biological ‘fact’ of sex—which means that they can reasonably be filed under the heading of sexuality studies. Indeed, it would seem that one of the unanticipated side effects of the rise of *gender* as an analytical category has been a decrease in attention paid to the older concept of *biological sex*.¹⁴ David Haig observes that, in 1979, there were approximately ten times as many articles published in the Social Sciences Citation Index

¹² John Money, Joan G. Hampson, and John L. Hampson, “Hermaphroditism: Recommendations Concerning Assignment of Sex, Change of Sex and Psychologic Management,” *Bulletin of the Johns Hopkins Hospital* 97, no. 4 (October 1955): 284–300, at 285.

¹³ See Alice Domurat Dreger, “Hermaphrodites in Love: The Truth of the Gonads,” in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1996), 46–66; and Joanne Meyerowitz, *How Sex Changed: A History of Transsexuality in the United States* (Cambridge, MA: Harvard University Press, 2002), 4.

¹⁴ I place ‘fact’ in quotation marks here because although sex inheres in certain biological features, the specific features that count as determinative for sex have changed significantly over time. Sex is thus not a ‘hard fact’ in the sense of the function of the esophagus, but rather a ‘soft fact’ in that it is socio-culturally contingent.

and the Arts & Humanities Citation Index containing the word ‘sex’ in their titles as those containing the word ‘gender’; by 2001, however, the number of articles containing ‘sex’ in the title was less than half of those containing ‘gender.’¹⁵ Haig suspects that the reason for this dramatic change in the sex-gender ratio lies partly in the influence of feminist post-structuralist philosophy, where “the domain of gender had a tendency to expand to subsume the category of sex.”¹⁶ As the psychologists Suzanne J. Kessler and Wendy McKenna wrote in a retrospective article from 2000, “Retaining a separation between sex and gender, even if it is proposed that both are socially constructed, raises the question of why biology is so important that it merits a special category.”¹⁷ However, Haig also suspects that a good portion of the rise in the use of ‘gender’ may simply owe to a perception that ‘gender’ is more politically correct, academically *en vogue*, or both. In his view, many of the academics who use the term ‘gender’ today really only mean it as a synonym for ‘sex.’ This can be particularly seen in natural scientific writings that refer to gender “in relation to the physiology of nonhuman animals, without any implication of a determining role of culture in the causation of observed differences.”¹⁸ And if this is frequently the case among academics, who are generally well-educated and many of whom specifically study gender, then it is not difficult to imagine that the use of ‘gender’ as a simple synonym for ‘sex’ is even greater among the population at large. (My own personal experience

¹⁵ Haig, “Rise of Gender,” 89.

¹⁶ *Ibid.*, 94.

¹⁷ Suzanne J. Kessler and Wendy McKenna, “Retrospective Response,” *Feminism and Psychology* 10, no. 1 (2000): 66–72, at 69.

¹⁸ Haig, “Rise of Gender,” 94–95.

certainly supports this claim.¹⁹) This is an unfortunate development—although sex and gender are obviously related, they are conceptually distinct, and ought to remain so.

As I suggested above, the recent rise of gender may also be partly due to the apparent simplicity of sex and the correspondingly apparent complexity of gender. In this system, sex is often regarded as a simple biological fact. Genitalia and gonads are often taken as the determining factors: males have penises and testicles, while females have vaginas and ovaries. But it turns out that it's actually quite difficult, if not impossible, to pin down an absolute sex distinction. How does one define biological maleness and femaleness? Going by the presence of genitalia and sex organs is problematic—does a woman who has a hysterectomy or an oophorectomy cease to be female? Or what about male soldiers who lose their testicles to combat injuries? Since the advent of molecular biology it has become common to think of sexual difference as inhering in chromosomes, which would appear to offer a stricter test of maleness and femaleness: for males, the twenty-third chromosome pair is an XY; for females, it is an XX. But here there are still problems. As many as one out of every five hundred men may be born with Klinefelter syndrome, where one possesses two or more X chromosomes as well as a Y chromosome.²⁰ Millions of other people are born with various other types of sexual aneuploidy, such as Turner syndrome (a.k.a. monosomy X); triple, quadruple, and quintuple X syndrome; and XYY syndrome. Although the number of people living with sexual aneuploidy is relatively low as a percentage of the overall population, they nevertheless constitute millions of people

¹⁹ See also note 22, below.

²⁰ Jeannie Visootsak and John M Graham, "Klinefelter Syndrome and Other Sex Chromosomal Aneuploidies," *Orphanet Journal of Rare Diseases* 1 (October 24, 2006): 42, at 42.

alive today, who cannot be absolutely sorted into the categories of ‘male’ and ‘female’ on the basis of their chromosomes.²¹

In the world of athletics, males and females have long competed in different categories for most sports. For most athletes it is uncontroversial which sexual category they qualify to compete in. But for decades now there have been calls for verification systems that would prevent athletes who are ‘actually’ male from competing as females. (The reverse scenario, that an ‘actually’ female athlete would compete as a male, is not typically viewed as a potential problem.) Between 1968 and 1999, the International Olympic Committee required all female competitors to undergo “gender verification” tests of various sorts.²² The IOC eventually discontinued the practice after receiving complaints from “essentially all of the relevant professional societies” that the process was inconclusive, invasive, and counter-productive, but the organization retained the right to test athletes on an individual basis if it deemed such a procedure to be necessary.²³

In 2012, the IOC revised its policies by introducing new “Regulations on Female Hyperandrogenism” that putatively shifted the organization’s concern from *sex per se* to

²¹ On cultural understandings of sexual differences, see in particular the work of Anne Fausto-Sterling: *Myths of Gender: Biological Theories about Women and Men* (New York: Basic Books, 1992); *Sexing the Body: Gender Politics and the Construction of Sexuality* (New York: Basic Books, 2000); and *Sex/Gender: Biology in a Social World* (New York: Routledge, 2012).

²² The fact that the IOC referred to a procedure so obviously concerned with biological sex as “gender verification” serves as an excellent example of the degree to which ‘gender’ often serves as a synonym for ‘sex’ in contemporary usage. I have not been able to determine when the procedure became officially known as “gender verification,” but the term appears to go back at least as far as 1986.

²³ Myron Genel, “Gender Verification No More?,” *Medscape General Medicine* 2, no. 3 (2000). Genel specifically mentions the “the American Medical Association, the American Academy of Pediatrics, the American College of Physicians, the American College of Obstetrics and Gynecology, the Endocrine Society, the Lawson Wilkins Pediatric Endocrine Society, and the American Society of Human Genetics” as objectors to the IOC practice.

admissible levels of “androgenic hormones,” which males typically produce in higher levels than females. Unsurprisingly, the new policy received substantial criticism; what is more important to note here, however, is the degree to which the IOC admitted that it was impossible for them to determine an athlete’s sex definitively. In the document announcing the new regulations, the IOC itself stated that

Nothing in these Regulations is intended to make any determination of sex. Instead, these Regulations are designed to identify circumstances in which a particular athlete will not be eligible (by reason of hormonal characteristics) to participate in 2012 OG [Olympic Games] Competitions in the female category. In the event that the athlete has been declared ineligible to compete in the female category, the athlete may be eligible to compete as a male athlete, if the athlete qualifies for the male event of the sport.²⁴

All of the above comes particularly to the fore in present-day discourse about trans people, particularly those who have undergone medical procedures (typically hormone therapy, surgical alteration, or both) that change or modify their sexual biology. Indeed, whether it is even *possible* to change one’s sex is controversial, and not just among the outwardly transphobic. Many people who are otherwise highly sympathetic to and supportive of trans issues would regard an MTF trans person who has undergone medical transition as being biologically male (because chromosomally male), even while understanding and recognizing her *gender* as being that of a woman. But if a trans person’s sexual biology has become more congruent with what we call the female type than with the male, why shouldn’t we consider her as being female in terms of both biological sex and also gender?²⁵ Despite the impossibility of drawing any sort of absolute distinction between male and female sexes (or even of absolutely determining the *number* of sexes), the difficulty that many people today have in looking past chromosomes when

²⁴ International Olympic Committee, “IOC Regulations on Female Hyperandrogenism,” August 2012, http://www.olympic.org/Documents/Commissions_PDFfiles/Medical_commission/2012-06-22-IOC-Regulations-on-Female-Hyperandrogenism-eng.pdf.

²⁵ Of course, many trans people also reject such binary classifications.

discussing biological sex demonstrates the accuracy of Helga Nowotny and Giuseppe Testa's argument that today's society displays "a diffuse form of genetic essentialism that sees in the genome the secular equivalent of the 'soul.'"²⁶

In short, the concept of biological sex is neither as simple nor as easy as it might first appear. Although academic focus on sexuality and gender has greatly enriched our knowledge and understanding of humanity in the last thirty years, the study of biological sex as a distinct cultural phenomenon has fallen by the wayside. This is a trend that ought to be reversed. To put the matter bluntly: the existence of trans people demonstrates that sex matters, and that it is not enough to discuss *only* gender and sexuality. This does not mean returning to the old model of sex as a static reification of traditional gender roles inscribed upon the body; rather, it means paying attention to the real significance that the cultural understanding of one's biological make-up has for identity and social recognition. Instead of seeing sex as a unchanging designation thrust upon an individual by a single biological factor (such as chromosomal karyotype) that is thought to contain the ultimate 'truth' of that person's sex, we ought to understand sex as a composite of a variety of biological characteristics, including but not limited to chromosomes, external and internal genitalia, hormones, bone structure, and other secondary sexual characteristics (breasts, chest hair, etc.). Crucially, most of these elements are not fixed, but may be modified to some degree through surgical or chemical (endocrinological) intervention. Hormone levels can be altered; organs can be removed; genitalia can be surgically altered; breasts can be augmented or reduced; and so on.

²⁶ Helga Nowotny and Giuseppe Testa, *Naked Genes: Reinventing the Human in the Molecular Age*, trans. Mitch Cohen (Suhrkamp, 2009; Cambridge: MIT Press, 2014), 9.

If all these elements are thought to be vital parts of a person's sexual biology, then it seems ludicrous to insist that people who undergo procedures to change these elements have not, in fact, changed their sex. While the biological character of sex means that it will (probably) never match the plasticity of gender, there is nevertheless a crucial malleability to sex that ought to be recognized. Conceiving of sex in this manner not only provides a more complete picture of the variety of biological elements that constitute our existence as sexed beings; it also opens a conceptual window through which those who choose to undergo sexual reassignment surgery or hormone therapy may be legitimately regarded, both socially and scientifically, as having changed their sex.

Ontological and Intellectual Priority in Sex and Gender

Today, as in the early twentieth century, it is commonly assumed that sex is prior to gender. But what does such a statement mean? In the coming chapters, I will distinguish between two types of priority, ontological and intellectual, when discussing matters of sex and gender (and, less often, sexuality).²⁷ In my usage, 'ontological priority' refers to positionality within the

²⁷ It should be noted that, in feminist thought, certain aspects of this distinction go back at least as far as Simone de Beauvoir, with much more elaboration upon it in the wake of Michel Foucault. See, for example, Beauvoir, *Second Sex*; Michel Foucault, *The History of Sexuality, Volume I: An Introduction*, trans. Robert Hurley (Paris: Editions Gallimard, 1976; New York: Random House, 1978); Scott, "Gender"; Eve Kosofsky Sedgwick, *Epistemology of the Closet*, 2nd ed. (Berkeley: University of California Press, 1990); Butler, *Gender Trouble*; and Judith Butler, *Bodies That Matter: On the Discursive Limits of "Sex"* (New York: Routledge, 1993). For more recent reconsiderations by Butler and Scott, see Judith Butler, *Undoing Gender* (New York: Routledge, 2004); and Scott, "Gender: Still a Useful Category of Analysis?" For examples of feminist theory that focus specifically on science, see Diana Long Hall, "Biology, Sex Hormones and Sexism in the 1920's," *Philosophical Forum* 5, no. 1-2 (1973-4): 81-96; Emily Martin, "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles," *Signs* 16, no. 3 (1991): 485-501; Lynda Birke, "Sitting on the Fence: Biology, Feminism, and Gender-Bending Environments," *Women's Studies International Forum* 23, no. 5 (September 1, 2000): 587-99; and Anne Fausto-Sterling's work:

temporality of two or more phenomena. To say that a phenomenon is ‘ontologically prior’ to another phenomenon is to say that the first exists before the second. ‘Intellectual priority’ refers to positionality within a person’s thought process. Something that is intellectually prior will function as a jumping-off point or a lens for thinking about a second concept; to say that one phenomenon has intellectual priority over another within a given person’s thought process is to say that the person in question thinks about the second phenomenon in a manner that is influenced by the first. Note that these two priorities refer to two different kinds of assessment. To assess the ontological priority of sex or gender within an argument is to assess the *content* of that argument—that is, to assess what the argument claims about the relation between sex and gender. Contrarily, to assess the intellectual priority of sex and gender within an argument is to assess the *process* of that argument—that is, to attempt to abduce the intellectual thought process that led to the existence of the argument in the first place.²⁸

Myths of Gender; Sexing the Body (which could also fit in the history list below); and *Sex/Gender*. For examples of historians investigating the priority of sex vis-à-vis that of gender, or using such an idea productively in their research, see George Chauncey, “From Sexual Inversion to Homosexuality: Medicine and the Changing Conceptualization of Female Deviance,” *Salmagundi*, no. 58/59 (1982–3): 114–46; Thomas W. Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* (Cambridge, MA: Harvard University Press, 1990); Nelly Oudshoorn, *Beyond the Natural Body: An Archeology of Sex Hormones* (London: Routledge, 1994); Alice Domurat Dreger, *Hermaphrodites and the Medical Invention of Sex* (Cambridge, MA: Harvard University Press, 1998); Meyerowitz, *How Sex Changed*; Chandak Sengoopta, *The Most Secret Quintessence of Life: Sex, Glands, and Hormones, 1850–1950* (Chicago: University of Chicago Press, 2006); Susan Stryker, *Transgender History* (Berkeley: Seal Studies, 2008); Geertje Mak, *Doubting Sex: Inscriptions, Bodies and Selves in Nineteenth-Century Hermaphrodite Case Histories* (Manchester: Manchester University Press, 2012); Ralph M. Leck, *Vita Sexualis: Karl Ulrichs and the Origins of Sexual Science* (Urbana: University of Illinois Press, 2016); and Emily Skidmore, *True Sex: The Lives of Trans Men at the Turn of the Twentieth Century* (New York: New York University Press, 2017).

²⁸ *Abductive inference* or *reasoning* is a term used by some philosophers and computer scientists to mean ‘inference to the best explanation.’ The process of abductive reasoning can be thought of with reference to deductive reasoning; where deduction reveals truth that is necessarily contained in the premises of an argument, abduction works backward to infer the conditions offering the best explanation of observed phenomena. For a more detailed explanation of the use of abductive

Today, arguments for a deterministic relationship between sex and gender usually assume that, to the extent that gender exists at all, it must originate in the facts (or ‘facts’) of biological sex. For example, Paul McHugh, who was chief of psychiatry at Johns Hopkins Hospital from 1975 to 2001, and who played a crucial role in closing the hospital’s transgender surgery program in 1979, has argued that “human sexual identity is mostly built into our constitution by the genes we inherit and the embryogenesis we undergo.”²⁹ In other words, McHugh claims that human gender is a product of human biology: male bodies produce male genders, and female bodies produce female genders. Or, as McHugh and a co-author put it more recently in a book-length article, “The scientific definition of biological sex is, for almost all human beings, clear, binary, and stable, reflecting an underlying biological reality that is not contradicted by exceptions to sex-typical behavior, and cannot be altered by surgery or social conditioning.”³⁰

For McHugh, sex is clearly prior to gender in the ontological sense, because gender is normally a product of sex, unless mental illness intervenes. McHugh treats sex as more natural or inalterable than gender—as ontologically prior to gender, in my terminology. He thinks that changing (or ‘changing’) sex to match gender is unnatural and abhorrent, and he also thinks that changing gender (or gender expression) to match sex is the proper treatment for people suffering from what he regards as a psychological disease. Because McHugh believes that sex possesses ontological priority over gender, he opposes the practice of sex (or gender) reassignment surgery;

reasoning in historical argumentation, see Allan Megill, *Historical Knowledge, Historical Error: A Contemporary Guide to Practice* (Chicago: University of Chicago Press, 2007), 129–31.

²⁹ Paul McHugh, “Surgical Sex,” *First Things* 147 (November 2004): 34–38, at 37.

³⁰ Lawrence S. Mayer and Paul McHugh, “Sexuality and Gender: Findings from the Biological, Psychological, and Social Sciences,” *The New Atlantis* 50 (Fall 2016): 4–143, at 93. Although this report somewhat complicates McHugh’s earlier insistence on a strict relationship between biology and gender, it nevertheless still assumes a natural correspondence between sex and gender type.

in his view, to engage in this practice is to “collaborate with a mental disorder rather than to treat it.”³¹ He argues that the “exchange of one’s sex” is impossible: “It... is starkly, nakedly false. Transgendered men do not become women, nor do transgendered women become men. All... become feminized men or masculinized women, counterfeits or impersonators of the sex with which they ‘identify.’”³²

While it is harder to say whether sex or gender (or neither) has *intellectual* priority in McHugh’s thinking, a careful reading indicates that he indeed grants intellectual priority to sex. In general, he expects differences in gender to resemble differences in sex. Even before he articulates his argument, his intellectual process prefigures a deterministic relation between sex and gender. This can explain some of the differences between his respective understandings of those two concepts. Because he is thinking first in terms of a sexual binary, he expects a gender binary to follow, and he regards deviation from that binary as problematic—indeed, as pathological. But because the gender binary is not the originary concept but merely a reflection of the sexual binary, such deviation is at least possible. For McHugh, non-binary gender is horrifying, but non-binary sex is simply impossible.

The Historical Contingency of Biological Sex

Regarding biological sex as a hard ‘fact’—that is, as something simple, verifiable, and (at least generally) unchangeable—is hardly a new attitude. The present-day genetic essentialism that

³¹ McHugh, “Surgical Sex,” 35.

³² Paul McHugh, “Transgenderism: A Pathogenic Meme,” *Public Discourse*, June 10, 2015, <http://www.thepublicdiscourse.com/2015/06/15145>. Note that McHugh’s presumption of the ontological priority of sex over gender leads him to also believe that sex is an immutable characteristic. However, sexual immutability does not necessarily follow from sexual ontological priority. Many of the thinkers examined in this dissertation, most notably Eugen Steinach, held that sex was mutable while also believing in the ontological priority of sex over gender.

Nowotny and Testa observe is merely the most recent justification for a much older belief in sexual essentialism. Nevertheless, the category of ‘sex’ is just as historically contingent as its partners gender and sexuality. Although sex is defined by biological criteria, the specific criteria used for that definition, as well as the conception of sex that those criteria are used to define, can and do change from culture to culture and from historical period to historical period. In other words, sex is a culturally and historically specific interpretation of certain pieces of physiological data.

Thomas Laqueur has shown that, prior to early modern period, Western culture saw human beings in terms of what he calls a “one-sex model.”³³ By this he means that difference between men and women was thought to be a difference in degree rather than a difference of kind. Under this *episteme*, ‘woman’ was generally viewed as an inferior variation on the standard male model.³⁴ Vaginas were understood as inverted penises, ovaries were thought to be internal testicles, and menstrual blood was interpreted as semen that had not been sufficiently purified and thickened, owing to the inferior heat of the female body. Indeed, as Laqueur points out, Western medicine did not even possess specialized terms for female genitals or the female reproductive system until the seventeenth century.³⁵ Instead, specifically female organs were usually referred to either with the same word used for the corresponding male organ, or else by way of idiomatic metaphors.

³³ Laqueur, *Making Sex*.

³⁴ On *epistemes*, see Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences*, Vintage Books ed. (Paris: Editions Gallimard, 1966; New York: Random House, 1994).

³⁵ Laqueur, *Making Sex*, 96–98.

Laqueur's work shows that in the western world it is only relatively recently that sex came to be thought of as ontologically prior to gender. He argues that the "one-sex model" of antiquity began to give way to a "two-sex model" around the time of the scientific revolution. In striking contrast to medical opinion in the previous two thousand years, *female* increasingly came to be seen as the incommensurable opposite of *male*. In the realm of science, the "two-sex" model of modernity resulted in an increasingly bifurcated understanding of the sexed body (whether human or animal). As Nelly Oudshoorn elaborates, beginning in the mid-eighteenth century, "The long-established tradition that emphasized bodily similarities over differences began to be heavily criticized."³⁶ From the skeleton, to the blood vessels, to the brain, nearly every organ of the body became sexed—that is, became understood as existing in two fundamental forms: one male, the other female. It was during this period that specifically female terminology (such as vagina, uterus, ovaries, Fallopian tubes, clitoris, vulva, etc.) first became relatively standardized in medical books. Only at this point did it become possible to think of sex as preceding gender ontologically.³⁷ In Laqueur's words, for pre-Enlightenment thinkers, "*sex*, or the body, must be understood as the epiphenomenon, while *gender*, what we would take to be a cultural category, was primary or 'real.' Gender—man and woman—mattered a great deal and was part of the order of things; sex was conventional, though modern terminology makes such a reordering nonsensical."³⁸ Thus the curious phenomenon, so common in Greek and Roman

³⁶ Oudshoorn, *Beyond the Natural Body*, 7.

³⁷ Here I apply my terminology to Laqueur's argument.

³⁸ Laqueur, *Making Sex*, 8; italics in original. Laqueur continues: "At the very least, what we call sex and gender were in the 'one-sex model' explicitly bound up in a circle of meanings from which escape to a supposed biological substrate—the strategy of the Enlightenment—was impossible. In the world of one sex... [t]o be a man or a woman was to hold a social rank, a place in society, to assume a cultural role, not to *be* organically one or the other of two

myth, of bodies changing shape to match their non-gender-typical behavior.³⁹ In my terminology, this means that pre-Enlightenment Europeans conceived of gender as both intellectually and ontologically prior to biological sex.

After the early modern period, and especially in the nineteenth century, the perceived dichotomy between males and females rigidified significantly, and doctors and laypeople alike came to view the differences between them as being biologically determined.⁴⁰ The new intellectual prominence (in the sense of an *episteme*) of the two-sex model encouraged doctors and scientists to devote increasing energy to the task of devising a precise, medical distinction between the sexes. The initial metric of distinction was genitalia, but then as now doctors ran into trouble whenever they tried to use penises and vaginas as absolute differentiators. Besides the fact that the organs could be altered through surgery or accidental occurrences, there were also frequent reports of people raised as women whose ‘clitorises’ were later determined to ‘actually’ be small penises, or *vice versa*. Alice Dreger reports that, by the end of the nineteenth century, doctors in France and England had settled on the gonads as possessing the ‘truth’ of the sex of the individual in question. As she argues, “personal and social identity had no role in the medical determination of ‘true sex’ at the end of the nineteenth century, nor did, for that matter, external genitalia. ‘Truth’ was determined by that which was contained inside the body—the gonads—even if that ‘truth’ were invisible and unsuspected.”⁴¹ In fact, if a French or British person were discovered to have a gonadal sex opposite to that which she or he had always

incommensurable sexes. Sex before the seventeenth century, in other words, was still a sociological and not an ontological category.”

³⁹ *Ibid.*, 7, as well as chapter 2.

⁴⁰ Indeed, as Laqueur points out, it is not surprising that this is also the era that gave birth to scientific racialism and to phrenology. *Ibid.*, 155.

⁴¹ Dreger, “Hermaphrodites in Love,” 48.

assumed to be her or his ‘real’ sex, it was possible for that person to have her or his legal sex changed to match the medically ‘correct’ status.⁴² Here the historical contingency of sex is aptly demonstrated by the degree to which doctors were willing to declare external genitalia as ultimately irrelevant to sex, when previously they had been regarded as the highest marker of sexual ‘truth.’

Since the publication of *Making Sex* in 1990, several scholars have criticized Laqueur’s claims.⁴³ For example, Lyndal Roper argues that Laqueur was overly reliant on an understanding of gender as a social organizing force and insufficiently attentive to what one might call the phenomenological aspects of gender—that is, the ways that gender structures one’s experience and understanding of corporeal existence.⁴⁴ Perhaps the majority of the criticisms of *Making Sex* relate to the chronology of the shift from the one-sex model to the two-sex model. Several scholars have noted that evidence of two-sex thinking can be found much earlier than Laqueur expects.⁴⁵ Conversely, Katherine Crawford notes that “ambiguity and contestation continued to shape theorization of the sexual body” even after the supposed switch to the two-sex model.⁴⁶

⁴² Ibid., 53.

⁴³ For a good overview of various criticisms of Laqueur (as well as a sustained critique of its own), see Karen Harvey, “The Substance of Sexual Difference: Change and Persistence in Representations of the Body in Eighteenth-Century England,” *Gender & History* 14, no. 2 (August 2002): 202–23.

⁴⁴ Lyndal Roper, *Oedipus and the Devil: Witchcraft, Sexuality, and Religion in Early Modern England* (New York: Routledge, 1994).

⁴⁵ See, for example, Michael Stolberg, “A Woman Down to Her Bones,” *Isis* 94, no. 2 (2003): 274–99; or Katharine Park and Robert A. Nye, “Destiny Is Anatomy,” review of Thomas W. Laqueur, *Making Sex: Body and Gender from the Greeks to Freud*, *New Republic*, February 18, 1991. Harvey lists several more examples in “Substance of Sexual Difference,” 204. It should be noted that Park and Nye’s criticism of Laqueur goes beyond quibbling over dates; they also accuse Laqueur of imposing a false chronological and national homogeneity upon his texts.

⁴⁶ Katherine Crawford, *European Sexualities, 1400–1800* (Cambridge: Cambridge University Press, 2007), 110.

However, despite frequent disagreement on the details, even Laqueur's most ardent critics generally acknowledge and appreciate the big idea of *Making Sex*, namely, that a significant shift has occurred between the way that the ancients tended to conceive of sex and the way that 'we moderns' have tended to think of sex in the last two centuries.

This dissertation, too, provides something of a corrective to Laqueur's narrative. However, I am less interested in when the shift from the one-sex to the two-sex model occurred than in what happened afterward. Although Laqueur is careful to note that the one-sex model did not disappear after the early modern period, his is basically a story of 'horizontal' sexual difference supplanting the 'vertical' sexual difference of the ancients.⁴⁷ By the beginning of the twentieth century, the logic of binary, opposed sexes would seem in Laqueur's view to have become insurmountable (although not quite unassailable). He argues that even Freud, "the great [early-twentieth-century] theorist of sexual ambiguity," who possessed the "fundamental insight that the body does not of itself produce two sexes," ended up tying himself in knots trying to stuff his theories of infant bisexuality into a two-sex mold.⁴⁸ Laqueur's narrative also ties nicely into one that many of us might tell ourselves about the present day, namely, that contemporary considerations of sex, gender, and sexuality beyond a strict male/female binary are, if not totally new, at least a departure within the modern era.

However, I argue that this widely accepted narrative leaves little room for attending to the fact that a surprisingly large number of nineteenth- and twentieth-century thinkers conceived of biological sex in non-binary terms. Such thinkers have tended to be either ignored or studied

⁴⁷ Laqueur qualifies his general argument thusly: "the modern invention of two distinct, immutable, and incommensurable sexes turns out to be less dominant than promised." He makes this claim explicitly *contra* Foucault, who, he thinks, "would see one *episteme* decisively, once and for all, replacing another." Laqueur, *Making Sex*, 21. See Foucault, *The Order of Things*.

⁴⁸ Laqueur, *Making Sex*, 240–41; 21.

in isolation from each other, creating the impression that their deviations from binary sexual thinking were idiosyncratic and abortive abnormalities. They were not. As it happens, at about the same time that Dreger's French and British doctors felt so confident that they had finally discovered the absolute dividing line between the sexes, researchers in Germany and Austria were performing endocrinological research that threatened to dramatically shift the scientific definition of sex. The discovery of gonadal hormones in the late-nineteenth and early-twentieth centuries offered the possibility of a radical new conception of sex. In place of the binary or two-sex model, there emerged a new conception holding that sex occurred along a spectrum, with the idealized male at one end, the idealized female at the other end, and any number of intermediary positions between. Thinkers from other spheres than biology and medicine—most notably, philosophers, feminists, and homosexual rights activists—adopted ideas of 'spectral' sex in their social and political theories. Some of these thinkers intended to assist the political and cultural emancipation of women and sexual minorities; others sought only to reinforce the dominant gender, sex, and/or sexuality norms of the time.

Although the new conception of spectral sex had some resemblance to the older one-sex model, it differed from that idea in at least two significant ways. First, spectral sex was rooted in contemporary medical knowledge, and thus, unlike the one-sex model, it did not rely on the ancient theory of medical humors. Second, and perhaps more important, spectral sex still retained an understanding of sexual difference built upon the Enlightenment model. None of the adherents of spectral sex (not even Otto Weininger) regarded woman as being only an inferior version of man. Women and men were still conceived of as being quite different from each other; the major difference now was that there were other possibilities besides that of the 'ideal' male and the 'ideal' female. Indeed, much as with Max Weber's ideal types, there was a general

recognition that ideal males and females do not actually exist. In this conception of sex, everyone is a sexual intermediary, to one degree or another.

* * *

Over the last several decades, the fields of history and women's studies have benefitted immensely from the emergence of gender and sexuality as tools of critical analysis. Such works as Joan Wallach Scott's *Only Paradoxes to Offer* and George Chauncey's *Gay New York* have reframed the way we think about the past by taking these critical aspects of identity and treating them not as eternal verities but as objects of historical inquiry.⁴⁹ However, as I noted above, the flourishing of gender and sexuality studies has not been accompanied by a similar focus on the third element of the triangle, biological sex. This is true of academic writing in general, and it is also more specifically true of the existing literature on European cultural history in this period. Although such important studies as Carl Schorske's *Fin-de-siècle Vienna* and George Mosse's *The Image of Man* contain much research on gender and sexual activity, they have practically nothing to say about conceptions of biological sex.⁵⁰ To be sure, there are some exceptions to the general lack of attention to the history of biological sex. Chandak Sengoopta's study of Otto Weininger and his research on the history of the gonads have demonstrated the often close-knit

⁴⁹ Joan Wallach Scott, *Only Paradoxes to Offer: French Feminists and the Rights of Man* (Cambridge, MA: Harvard University Press, 1996); George Chauncey, *Gay New York: Gender, Urban Culture, and the Makings of the Gay Male World, 1890–1940* (New York: Basic Books, 1994).

⁵⁰ Carl E. Schorske, *Fin-de-Siècle Vienna: Politics and Culture* (New York: Knopf, 1979); George L Mosse, *The Image of Man: The Creation of Modern Masculinity* (Oxford: Oxford University Press, 1996).

connections between the science and the philosophy of sex in early twentieth-century Europe.⁵¹ Nelly Oudshoorn's work on the development of sex hormones and Alice Dreger's work on pseudohermaphrodites at the end of the nineteenth century provide excellent case studies of the ways that pre-existing gender conceptions can frame sexual science.⁵² Joanne Meyerowitz's study of transsexuality in America has ably shown the effectiveness of cultural history that takes biological sex seriously.⁵³ Outside the realm of history, the work of the biologist and social theorist Anne Fausto-Sterling has done much to explore the relation between sex and gender, without discounting either.⁵⁴ Recently, Ralph Leck has published important research on the political significance of Karl Heinrich Ulrichs's naturalistic approach to sexual science, and Kirsten Leng has examined the interactions between conceptions of gender and of sex in the work of women sexologists.⁵⁵ And then there is Thomas Laqueur, whose *Making Sex* demonstrated almost thirty years ago the viability and utility of using biological sex as an analytical lens for historical research.

All these authors have made important contributions to the study of history, and my project could not exist without their work. But, with the exception of Meyerowitz's work on postwar America, and of Sengoopta's work on Weininger, all the books mentioned above focus

⁵¹ Chandak Sengoopta, *Otto Weininger: Sex, Science, and Self in Imperial Vienna* (Chicago: University of Chicago Press, 2000); Sengoopta, *Quintessence of Life*.

⁵² Dreger, "Hermaphrodites in Love"; Dreger, *Hermaphrodites and the Medical Invention of Sex*; Oudshoorn, *Beyond the Natural Body*. For a more recent account of intersexuality at the turn of the century, which is in some ways opposed to Dreger's interpretation, see Mak, *Doubting Sex*.

⁵³ Meyerowitz, *How Sex Changed*.

⁵⁴ Fausto-Sterling, *Myths of Gender*; Fausto-Sterling, *Sexing the Body*; Fausto-Sterling, *Sex/Gender*.

⁵⁵ Leck, *Vita Sexualis*; Kirsten Leng, *Sexual Politics and Feminist Science: Women Sexologists in Germany, 1900–1933* (Ithaca: Cornell University Press, 2018).

predominantly on scientists. Scientists are indeed an important part of the story—but they are only one part. Cultural conceptions of biological sex are not rooted solely in scientific data, and they are not produced (and certainly not popularized) solely by scientists. By focusing on the reception and production of conceptions of spectral sex within a wide range of intellectual spheres, including not only scientists and medical doctors, but also philosophers, feminists, and gay rights activists, I aim in this dissertation to show crucial connections among multiple fields of history—connections that might remain invisible to a narrower view. Ideas of sexual spectra influenced many prominent thinkers in this period, and the story of how that occurred demands a broad focus.

Plan of the Dissertation

Although the shift towards a conception of spectral sex was by no means universal, it can be detected within a large range of intellectual spheres. To that end, this dissertation will examine the writings of major thinkers not only from the fields of sexology and biology, where the shift first became apparent, but also from medicine, philosophy, and feminism. As will become clear, the new spectral conception of sex was not significant merely for presenting a potential advance in biological knowledge. Even the most sclerotically scientific of thinkers regarded spectral sex as an idea with broad social ramifications. Sexologists found that a spectral conception of sex opens new ground to conceive of homosexuality as a ‘natural’ phenomenon. For many feminists a spectral conception of sex provided a new way of arguing that the social and cultural restrictions upon women had no natural grounding. For the philosopher Otto Weininger, a spectral conception of sex was key to explaining the mysteries of homosexuality specifically and human sexual attraction generally—although he eventually abandoned sexual spectrality in favor

of a psychological binary that allowed him to argue for the ultimate, cosmic inferiority of women. For the sexual activist, sexologist, and physician Magnus Hirschfeld, a spectral conception of sex gave key evidence that transvestites and homosexuals are not dangerous and mentally ill but are rather people deserving of respect and legal toleration. In other words, the spectral conception of sex meant many different things to many different people.

The chapters of this dissertation are thematic in character, although there is a rough chronological organization as well. Each focuses on a few major thinkers from a particular intellectual sphere. The particular authors examined should not primarily be seen as ‘representatives’ of the larger field that they inhabit; rather, each illustrates the importance of differing intellectual contexts when we approach the concept of biological sex. Even when they were considering (roughly) the same idea of a sexual spectrum, different thinkers from different fields interpreted the scientific, philosophical, social, cultural, and political significance of spectral sex in rather different ways. For all who embraced the new idea, however, it meant a radical reconsideration of human sexuality, and indeed of human nature. Even those who opposed the idea now found that they had to defend conceptions of human nature that they could previously have taken for granted.

In my first chapter, “From *Geschlecht und Charakter* to Sexual Liberation,” I examine unexpected intellectual affinities between the thinking of Otto Weininger, Anna Rüling, and Rosa Mayreder. Weininger was a notoriously misogynist philosopher, while Rüling and Mayreder were important feminist thinkers. Although they disagreed on most subjects, all three conceived of sex in spectral, rather than binary, terms. However, they put this idea to sharply different political ends. For the feminists, the absence of absolute biological distinctions between the sexes meant that there ought also to be an absence of absolute legal distinctions; for

Weininger, however, the biological sexual spectrum served to justify his belief in the inferiority of women. As I ultimately argue, the divergent uses to which Weininger, Rüling, and Mayreder put the spectral conception of biological sex indicates a disjunction between socio-scientific definitions and politico-cultural values. In other words, we must be careful not to read political progressivism into biological theories, for politics and science have no necessary correlation.

In the second chapter, “Sexual Chemistry,” I explore the late-nineteenth- and early-twentieth-century work of scientists in the new field of endocrinology, which provided the largest impetus towards the conception of spectral sex. I examine in particular Charles-Edouard Brown-Séquard, commonly regarded as the founder of the field, and Eugen Steinach, the person most responsible for the discovery of gonadal hormones. I argue that endocrinology advanced a view of the body as plastic and malleable, and that this encouraged research such as Steinach’s, which explored the possibility of artificial changes to sexual biology effected by endocrinological intervention. The discovery that changing the hormonal balance of an organism can alter its sexual development implied that sex is not binary, but rather exists along a spectrum of some kind, with many different configurations possible outside the ‘ideal’ male and female. However, although Steinach’s work did much to destabilize the *sexual* binary, it nevertheless remained quite dependent upon the *gender* binary of his time.

I continue this analysis in the third chapter, “Plastic Sex, Binary Gender,” where I investigate Steinach’s failed attempts to develop endocrinological cures for homosexuality and old age. While chapter two shows how Steinach was able to destabilize the sexual binary through animal experiments that paid little attention to social matters, chapter three demonstrates the problems of applying such an approach to the human realm—particularly when one is willing to let conceptions of gender go unquestioned. We see in this chapter how the new plasticity of sex

implied by Steinach's research, despite its seemingly progressive implications, was deployed instead to artificially "re-tune" aberrant individuals to make them conform more closely to the dominant gender expectations of the time.

In the fourth and final chapter, "Sexual Theory, Political Praxis," I examine the career and thinking of Magnus Hirschfeld, a Berlin physician who was one of the most important sex researchers and social activists of the twentieth century, in addition to being himself homosexual. He founded the Scientific-Humanitarian Committee in 1897, generally regarded as the first large-scale organization to advocate for the rights of homosexuals, and he edited the influential journal *Jahrbuch für sexuelle Zwischenstufen* (Yearbook for Sexual Intermediaries) from 1899 to 1923. In this chapter I explore in particular Hirschfeld's so-called "Theory of Sexual Intermediaries," which was the most radical articulation of the sexual spectrum in his time. In its mature form, his theory postulated four different axes of sexual intermediacy. Hirschfeld marshalled his theory to explain the existence of a wide variety of "sexual intermediaries," a category that for him included homosexuals, transvestites, and hermaphrodites, among others. As I argue, this theory formed the cornerstone of all Hirschfeld's scientific and political work—in large measure because he saw it as a way of allowing intermediaries' fundamental humanity to be seen.

In my conclusion, I briefly explore why the idea of a sexual spectrum seemed to fade from view in the thirties and for several decades thereafter. To be sure, such a narrative is somewhat exaggerated, yet there seems to be a real distinction between conceptions of sex in the twenties, conceptions of sex in the fifties and sixties, and conceptions of sex today. I also offer some speculation as to why the Nazis found Hirschfeld and his research so deeply threatening.

Finally, I draw out some contemporary ramifications of my argument, particularly for those seeking to understand and advocate for trans people.

After 1933, the Nazi regime quickly suppressed writing that advocated the spectral conception of sex and ended Hirschfeld's and Steinach's respective research.⁵⁶ In the following decades, a few major thinkers—notably, Harry Benjamin, John Money, and to a certain extent Alfred Kinsey—continued to conceive of sex as a spectrum, but for the most part that idea disappeared until quite recently. Indeed, I think that it is not too far-fetched to claim that even today, and even among otherwise progressive- and liberal-minded thinkers, sex is thought of as a biological binary. It is my hope that this dissertation will expand the boundaries of our knowledge about conceptions of sex among European intellectuals around the turn of the century, as that, in and of itself, is a worthy goal. However, at the broader level, I am convinced that the academic study of major thinkers in this period, particularly Hirschfeld, can help us to conceive of a scientifically valid way of regarding sex as both biologically rooted *and also* potentially fluid—something which is of great relevance for the contemporary campaign for trans rights. Additionally, I would hope that this dissertation will provide a methodological encouragement for historians and other researchers in the human and social sciences to pay greater attention to biological sex as an analytical category, not at the expense of gender and sexuality, but rather in partnership with those two concepts.

⁵⁶ In Steinach's case, it was not until after the *Anschluss* of Austria in 1938 that the Nazis were able to end his research.

Chapter 1

From *Geschlecht und Charakter* to Sexual Liberation: On Unexpected Agreement between Otto Weininger, Rosa Mayreder, and Anna Rüling

One could say that *in empirical experience there is neither Man nor Woman, but only male and female.*

Otto Weininger

[E]ach homosexual woman possesses more or less feminine characteristics, which, with the immensely diverse gradations in the transition between the sexes, can at times be expressed in a sexual drive toward a man.

Anna Rüling

When we say ‘the human male’ or ‘the human female,’ we have used an expression that shows that there is something common to the two which designates the species.

Rosa Mayreder

When I read his work, I wrote to Otto Weininger: “An admirer of women enthusiastically agrees with your arguments for despising women.”

Karl Kraus¹

In the early twentieth century, Rosa Mayreder, a prominent Austrian feminist of philosophical bent, acquired a reputation for intellectual rigor in pursuit of women’s equality. When the English translation of her *A Survey of the Woman Problem (Zur Kritik der Weiblichkeit; 1905)* was published in 1913, readers of the British edition were greeted with an advertisement for other books along similar lines from the same publisher.¹² Perhaps surprisingly, the book at the

¹ Otto Weininger, *Sex and Character: An Investigation of Fundamental Principles*, trans. Ladislaus Löb (Vienna: Wilhelm Braumüller, 1903; Bloomington: Indiana University Press, 2005), 14; Anna Rüling, “What Interest Does the Women’s Movement Have in the Homosexual Question?,” in *We Are Everywhere: A Historical Sourcebook of Gay and Lesbian Politics*, ed. Mark Blasius and Shane Phelan, trans. Lillian Faderman and Brigitte Eriksson (1905; New York: Routledge, 1997), 143–50, at 144; Rosa Mayreder, *A Survey of the Woman Problem*, trans. Herman Scheffauer (1905; New York: George H. Doran, 1913), 245; Karl Kraus, “Kehraus,” *Die Fackel* 9, no. 229 (July 2, 1907): 1–17, at 14; “‘Ein Frauenverehrer stimmt den Argumenten Ihrer Frauenverachtung mit Begeisterung zu,’ schrieb ich an Otto Weininger, als ich sein Werk gelesen hatte.” Unless otherwise mentioned, all emphasis (both italics and bolding) in quotations is present in the original text.

² The British edition, published in London by William Heinemann, is otherwise identical to the American edition (published by George H. Doran) in the same year, which is cited above. The advertisement appears on page ii of the British edition.

top of the advertising list is Otto Weininger's notorious *Sex and Character* (*Geschlecht und Charakter*; 1903), one of the most remarkably misogynist books in a period that is not exactly known for its rhetorical respect for women.³ Like Mayreder's *Survey*, Weininger's book, which had been translated into English some seven years before, sought to provide a comprehensive treatment of the 'woman question.' But where Mayreder sought to demolish the system of universal sexual inequality, Weininger attempted to prove philosophically that absolute Woman possesses no soul and has "no share in ontological reality."⁴ Although the two books address the same general subject, their conclusions are as far apart as possible. Today, it is quite difficult to believe that anybody who accepted Mayreder's conclusions would have had any interest whatsoever in Weininger (and *vice versa*)—so why then would the publishers have concluded that advertising Weininger's book at the front of *Survey* made good business sense?

In this chapter, I make the *prima facie* counterintuitive claim that Rosa Mayreder, as well as her fellow feminist thinker Anna Rüling, agreed far more with Weininger than today's readers might expect.⁵ I argue that these three authors agreed to a surprising degree in their conceptions of biological sex; specifically, they all understood sex as a spectrum, rather than as a binary (as was typical for their era). Their 'spectral' concept of sex held that the 'full' male and female are

³ See, for example, the introduction to the 1989 edited volume *Feminism and Science*, which—more than eighty years after the English publication of *Sex and Character*—opens with a quotation from that book, and uses Weininger as an example of why the volume is necessary. Nancy Tuana, ed., *Feminism and Science* (Bloomington: Indiana University Press, 1989), vii.

⁴ Weininger, *Sex and Character*, 258.

⁵ Other feminist thinkers could reasonably be examined here as well, including Helene Stöcker, Johanna Elberskirchen, and possibly Grete Meisel-Hess and Irma Troll-Borostyána. In future scholarship I hope to include them in my analysis. For a discussion of Weininger's appropriation in certain early-twentieth-century English feminist circles, see Judy Greenway, "It's What You Do with It That Counts: Interpretations of Otto Weininger," in *Sexology in Culture: Labelling Bodies and Desires*, ed. Lucy Bland and Laura Doan (Chicago: University of Chicago Press, 1998), 27–43.

ideal types at opposite ends of a sexual spectrum, with every person occupying some sort of intermediary position between the two endpoints. Biologically speaking, there were no absolute distinctions between men and women in this system, because everyone would consist of an individual mixture of male and female elements. Instead of an absolute binary, there would be only relative differences in the levels of masculinity and femininity.

As we shall see, the spectral conception of sex held very different implications for these thinkers. For Mayreder and Riling, the absence of absolute biological distinctions between men and women entails that there ought also to be an absence of legal and socioeconomic distinctions. For Weininger, however, the amount of biological masculinity present in a person indicates their potential for genius, while the degree of biological femininity indicates their natural subservience, or—more accurately—their nothingness. Above all, the remarkably different uses to which Weininger, Riling, and Mayreder put the spectral conception of biological sex indicates disjunction between socio-scientific definitions and politico-cultural values. Although we today may be inclined to view certain scientific ideas (such as a rejection of sexual binarism) as socially progressive, it cannot be assumed that one's science and one's politics would necessarily align in this expected manner. Scientific views (both historical and present-day) should never be assumed to determine political views—and neither should we assume the reverse.

In this chapter I first examine the conception of sex that Weininger established in *Sex and Character*. After that, I compare Weininger's views with those of Anna Riling in her famous speech, "What Interest Does the Woman's Movement Have in the Homosexual Question?" and of Rosa Mayreder in her *A Survey of the Woman Problem*. The three works appeared within a span of about two years (1903–5). I conclude with some comments concerning the implications

of this affinity among the three thinkers for social justice today, particularly for the trans rights movement.

Otto Weininger: Misogyny and Idealism

Otto Weininger (1880–1903) wrote only one major work in his short lifetime. That book, *Sex and Character: An Investigation of Fundamental Principles* (*Geschlecht und Charakter. Eine prinzipielle Untersuchung*) was published in June 1903, about four month before the author’s suicide.⁶ It doubtful that the book would have achieved the wide notice that it did without Weininger’s subsequent death, which was frequently interpreted not as a *Selbstmord* but rather as the *Freitod* of a genius too pure for this world. The fact that he shot himself in a room (rented specially for the occasion) in the house where Beethoven died only added to the *fin-de-siècle* mystique and romanticism surrounding him.⁷

⁶ All citations from the German text come from Otto Weininger, *Geschlecht und Charakter. Eine Prinzipielle Untersuchung*, 10th ed. (1903; Vienna: Wilhelm Braumüller, 1908). Unless otherwise indicated, all English quotations come from Ladislaus Löb’s relatively recent English translation, cited above. Löb’s translation is a marked improvement over the previous anonymous translation, published in 1906. That translation, which Ludwig Wittgenstein somewhat famously regarded as “beastly,” omits large portions of the text and contains, as the philosopher and historian of ideas Allan Janik put it, “numerous examples of absolutely grotesque mistranslations.” Any English-language reader of Weininger is advised to stay well away from the 1906 translation. Otto Weininger, *Sex and Character* (London: W. Heinemann, 1906); Ludwig Wittgenstein, *Cambridge Letters: Correspondence with Russell, Keynes, Moore, Ramsey, and Sraffa*, ed. Brian McGuinness and Georg Henrik von Wright (Oxford: Blackwell, 1995); Allan Janik, review of Otto Weininger, *Sex and Character: An Investigation of Fundamental Principles*, *Central European History* 39, no. 2 (June 2006): 317–20. For a brief publishing history of *Geschlecht und Charakter*, see Löb’s translator’s note: *Sex and Character*, xlvii.

⁷ In his introduction to Löb’s 2005 translation of *Sex and Character*, Daniel Steuer notes that “The place of [Weininger’s] suicide... is unfailingly mentioned in every report of his death, and in most later writings on him.” Now my own name can be added to that list. Daniel Steuer, “A Book That Won’t Go Away: Otto Weininger’s *Sex and Character*,” introduction to *Sex and Character*, by Otto Weininger, xi–xlvi, at xviii.



Figure 1.1: Otto Weininger (1880–1903)⁸

Sex and Character met with little excitement upon its release.⁹ In fact, perhaps the only notable engagement with the work during Weininger’s life came from the phrenologist Paul

⁸ Chandak Sengoopta, *Otto Weininger: Sex, Science, and Self in Imperial Vienna* (Chicago: University of Chicago Press, 2000), ii. Sengoopta’s use of this photo comes courtesy of Matthes & Seitz Verlag, Munich.

⁹ *Ibid.*, 19. Although the quantity of research on Weininger is immense, Sengoopta’s book is the only major contribution to Weininger scholarship I know of that has appeared in recent decades. Going further back, perhaps the most prominent Weininger scholars of the late twentieth century are Allan Janik and Jacques Le Rider; see Allan Janik, “Therapeutic Nihilism: How Not to Write about Otto Weininger,” in *Structure and Gestalt: Philosophy and Literature in Austria-Hungary and Her Successor States*, ed. Barry Smith (Amsterdam: John Benjamins B.V., 1981), 263–92; Allan Janik, “Weininger and the Science of Sex: Prolegomena to any Future Study,” in *Decadence and Innovation: Austro-Hungarian Life and Art at the Turn of the Century*, ed. Robert B. Pynsent (London: Weidenfeld and Nicholson, 1989), 24–32; and Jacques Le Rider, *Der Fall Otto Weininger. Wurzeln des Antifeminismus und Antisemitismus*, trans. (from French to German) Dieter Hornig (Presses Universitaires de France, 1982; Vienna: Löcker, 1985). Weininger is also a regular figure in broader histories of *fin-de-siècle* Vienna, such as Allan

Julius Möbius, who accused Weininger of plagiarizing his sexological research.¹⁰ Möbius, whose own work of woman-bashing science *Über den physiologischen Schwachsinn des Weibes* (On the physiological feeble-mindedness of women) had been dismissed by Weininger as “pedestrian,” later clarified that his primary complaint was a disciplinary one—namely, that Weininger, as a philosopher, should not have intruded upon a discussion that ought to be reserved to scientists.¹¹ However, shortly after Weininger’s death major Viennese intellectual and cultural figures began to offer positive evaluations of his work. Among his most ardent defenders were the satirist and journalist Karl Kraus and the Swedish playwright August Strindberg; two weeks after Weininger’s suicide, the latter published an obituary in Kraus’s journal *Die Fackel* where he sought to “honor the memory” of “a brave manly thinker.”¹² Kraus

Janik and Stephen Toulmin, *Wittgenstein’s Vienna* (New York: Simon & Schuster, 1973); and William M. Johnston, *The Austrian Mind: An Intellectual and Social History, 1848–1938* (University of California Press, 1983). However, he is curiously absent from Carl Schorske’s *Fin-de-Siècle Vienna: Politics and Culture* (New York: Knopf, 1979). Recent work on Weininger has often focused on gender analysis of his work and on Wittgenstein’s relationship to Weininger. See Nancy A. Harrowitz and Barbara Hyams, eds., *Jews and Gender: Responses to Otto Weininger* (Philadelphia: Temple University Press, 1995); and David G. Stern and Béla Szabados, eds., *Wittgenstein Reads Weininger* (Cambridge: Cambridge University Press, 2005)

¹⁰ Paul Julius Möbius, review of Otto Weininger, *Geschlecht und Charakter*, *Schmidts Jahrbücher der in- und ausländischen gesammten Medicin* 279, no. 2 (1903): 213.

¹¹ Weininger, *Sex and Character*, 231; Paul Julius Möbius, *Über den physiologischen Schwachsinn des Weibes* (Halle (Saale): Marhold, 1900); Paul Julius Möbius, *Geschlecht und Unbescheidenheit* (Halle (Saale): Marhold, 1904). For more on the Möbius–Weininger disagreement, see Sengoopta, *Otto Weininger*, 153; and Steuer, “A Book That Won’t Go Away,” xx–xxi.

¹² August Strindberg, “Idolatrie, Gynolatrie (Ein Nachruf),” *Die Fackel* 5, no. 144 (October 17, 1903): 1–3; “eines tapferen männlichen Denkers.” Strindberg and especially Kraus feature prominently in many cultural histories of *fin-de-siècle* Austria; see for example: Janik and Toulmin, *Wittgenstein’s Vienna*; and Schorske, *Fin-de-Siècle Vienna: Politics and Culture*. For a rather thorough look at Kraus, see Edward Timms, *Karl Kraus, Apocalyptic Satirist: Culture and Catastrophe in Habsburg Vienna* (New Haven: Yale University Press, 1986); and *Karl Kraus, Apocalyptic Satirist: The Post-War Crisis and the Rise of the Swastika* (New Haven: Yale University Press, 2005).

would continue to champion Weininger in *Die Fackel* for many years, and other luminary European thinkers and artists, such as Ludwig Wittgenstein, James Joyce, and—reservedly—Sigmund Freud, regarded him (posthumously) as something of a genius.

To be sure, Weininger's posthumous reputation was not uniformly glowing. A second accusation of plagiarism came from the Berlin otolaryngologist Wilhelm Fliess.¹³ At the time of *Sex and Character's* publication, Fliess had been working for a few years on a theory of biological periodicity. When Weininger expounded in *Sex and Character* a hypothesis that bears some resemblance to Fliess's theory, the otolaryngologist accused Weininger (posthumously) of having stolen the idea from him.¹⁴ Even more dramatically, the psychiatrist Ferdinand Probst attempted to demonstrate in a book-length study that Weininger had been, in fact, completely

¹³ Today, Fliess is primarily known for his friendship with Freud (prior to 1906) and for developing a rather esoteric theory that claimed that there is an interrelation of function (and potentially of psychological neurosis) between the nose and the genitals. See Wilhelm Fliess, *Die Beziehungen zwischen Nase und weiblichen Geschlechtsorganen in ihrer biologischen Bedeutung dargestellt* (Leipzig: Franz Deuticke, 1897).

¹⁴ Fliess and Weininger did not know each other personally, although Weininger was aware of Fliess's writings (see, for example, *Sex and Character*, 344). In 1903, Fliess had not yet published anything concerning his theory of periodicity. However, Weininger's good friend Hermann Swoboda was a patient of Freud's. Fliess believed that Freud had told Swoboda about Fliess's theory of periodicity, and that Swoboda had, in turn, passed the idea along to Weininger. As far as I know, there is no historical certainty as to whether Fliess's accusations were accurate, but they are at least plausible (even though they rely upon Weininger getting the information fourth-hand). For more on this, see Sengoopta, *Otto Weininger*, 15; 138–39; Michael Schröter, "Fliess vs. Weininger, Swoboda und Freud: Der Plagiatsstreit von 1906 im Lichte der Dokumente," *Psyche: Zeitschrift für Psychoanalyse und ihre Anwendungen* 56, no. 4 (April 2002): 338–68; Frank J. Sulloway, *Freud, Biologist of the Mind: Beyond the Psychoanalytic Legend* (New York: Basic Books, 1979), chapters 5–6; and Steuer, "A Book That Won't Go Away," xvii. On Fliess's theory of periodicity, see his book *Der Ablauf des Lebens: Grundlegung zur exakten Biologie* (Leipzig, 1906).

insane.¹⁵ In all likelihood, these denunciations only brought him more fame (or infamy).¹⁶ As is often the case with today's right-wing provocateurs, the negative attention tended to add to Weininger's reputation as someone who was willing to explore supposedly 'hard truths' about male superiority.

As Weininger put it, the purpose of *Sex and Character* is "to trace all the contrasts between Man and Woman back to a single principle."¹⁷ However, it is questionable not just whether Weininger succeeded in his aim, but indeed whether such a single principle is even identified. Despite Weininger's clear (and more than a little manic) desire to discover the essence of Man and Woman through rigorous philosophical inquiry, *Sex and Character* is a book that contains multitudes, and those multitudes are contradictory. Perhaps the only truly consistent element is its negative valuation of women. By Weininger's own admission, the book is "antifeminist... almost everywhere"—here one is happy to take him at his word.¹⁸

The biggest divide in the work is one that Weininger himself implements, between the first and the second parts of the book. He describes the "first (preparatory) part" as "biological and psychological" and the "second or main part" as "psychological and philosophical."¹⁹ Weininger claims that this division is a necessary one. Although his aims are philosophical, he requires the help of science (particularly biology) to start things off. As he puts it: "I had to free

¹⁵ Ferdinand Probst, *Der Fall Otto Weininger. Eine Psychiatrische Studie* (Wiesbaden: J.F. Bergmann, 1904). This same title was used for the German translation of a more recent study of Weininger by Jacques Le Rider.

¹⁶ For more on Weininger's reception and lasting influence, see Sengoopta, *Otto Weininger*, chapter 8.

¹⁷ Weininger, *Sex and Character*, 3.

¹⁸ *Ibid.*, 4.

¹⁹ *Ibid.*, 5.

myself from biology in order to become a psychologist through and through.”²⁰ As Weininger scholars have shown, this statement is not only methodological but also biographical. The first part largely mirrors what he had written for a planned study called “Eros and Psyche: A Bio-Psychological Study.” That work, although never completed, formed the basis for his (successful) 1901 application to study under the philosophers Friedrich Jodl and Laurenz Müllner at the University of Vienna.²¹ Over the few remaining years of his life, Weininger would undergo a radical intellectual shift, from a scientific (if idiosyncratic) positivist into a Kantian metaphysical psychologist.²² After Weininger’s death, Jodl recorded that the young author “came to me as a convinced follower of Avenarius’s empiriocriticism, and in the course of a year had completed a metamorphosis into a full-blown mystic.”²³ The second, much longer, part of the book follows the concerns of Weininger’s final, mystical period. As Sengoopta observes: “At one level, the four-hundred-odd pages of *Geschlecht und Charakter* record the metamorphosis of

²⁰ Ibid., 4.

²¹ See Hannelore Rodlauer, “Von ‘Eros und Psyche’ zu ‘Geschlecht und Charakter’: Unbekannte Weininger-Manuskripte im Archiv der Österreichischen Akademie der Wissenschaften,” *Österreichischen Akademie der Wissenschaften, philosophisch-historische Klasse*, no. 124 (1987): 110–39. Rodlauer’s article describes her discovery of a detailed outline of “Eros und Psyche” in the archives of the Austrian Academy of Sciences. That outline has since been published, along with several of Weininger’s letters, in Otto Weininger, *Eros und Psyche: Studien und Briefe, 1899–1902*, ed. Hannelore Rodlauer (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1990), 143–90.

²² Sengoopta, *Otto Weininger*, 16–19.

²³ Quoted in Le Rider, *Der Fall Otto Weininger*, 36, from Margarete Förster Jodl, *Friedrich Jodl, sein Leben und Wirken. Dargestellt nach Tagebüchern und Briefen* (Stuttgart: Cotta, 1920). “Er kam zu mir als überzeugter Anhänger des Empiriokritizismus von Avenarius und hat im Laufe einiger Jahre die Metamorphose vollzogen, die ihn zum vollen Mystiker gemacht.” I owe this reference to Sengoopta, *Otto Weininger*, 18.

a critical positivist into a hectoring prophet, resulting in serious inconsistencies in perspective and argument between the early and later parts of the treatise.”²⁴

Sex and Character's Cellular Sexual Spectrum

Although Weininger's notoriety rests mostly on the significantly larger second section of the book—that is where one finds his most inflammatory and misogynistic comments—it is the earlier, biological portion of *Sex and Character* that is most relevant to the study of historical conceptions of biological sex. There Weininger focuses on the empirical realities of existence, as well as on the infinite multiplicity of individual biological configurations, and it is perhaps for this reason that his misogyny in the first part is significantly muted in contrast to the mystical ideal-type philosophizing of the second part. In other words, the individualizing drive of Weininger's argument in the first part works against his desire to reduce women to stereotypes.

Subtitled “Sexual Diversity,” the first part of *Sex and Character* attempts to determine the biological basis for sexual differentiation. Weininger begins by casting doubt on the distinction between male and female. He asks whether it “Is... really the case that all ‘men’ and all ‘women’ are totally different from each other” (note his scare quotes) and then posits that it is “unlikely that in nature a clean cut was made between masculinis on the one hand and femininis on the other.”²⁵ He quickly moves on to declare that “By classifying the majority of living things in the most general terms and simply calling them male or female, man or woman, we can no

²⁴ Sengoopta, *Otto Weininger*, 17.

²⁵ Weininger, *Sex and Character*, 10. “Masculinis” and “femininis” are copied directly from the German text, where Weininger uses these unusual Latinate terms. Curiously, these terms appear nowhere else in the book.

longer do justice to the facts.”²⁶ For the purposes of inquiry, Weininger posits the existence of ideal Man and ideal Woman, which he designates respectively as M and W; part of the task of this first part of the book is to discern the biological essence of these two types. However, within the same sentence where they are introduced, Weininger declares that neither M nor W actually exists in the real world. Instead, he asserts that “*Between Man and Woman there are innumerable gradations, or ‘intermediate sexual forms.’*”²⁷ Because these intermediate sexual forms—a category that includes every living human—contain a mixture of male and female elements, it follows that, strictly speaking, “One must no longer call an individual A or an individual B simply a ‘man’ or a ‘woman’ but each must be described in terms of the fractions it has of *both*.”²⁸

Clearly, this is a fully spectral theory of biological sexual difference. Weininger’s particular understanding of a sexual spectrum is an idiosyncratic one that draws on Carl von Nägeli’s theory of cellular idioplasm, as well as on then-recent developments in endocrinology and organotherapy.²⁹ Nägeli, an influential botanist of the second half of the nineteenth century, had attempted in his final major work to solve the riddle of biological inheritance.³⁰ Since

²⁶ Ibid., 12.

²⁷ Ibid., 13.

²⁸ Ibid., 14.

²⁹ On Weininger’s indebtedness to Nägeli and other scientists, see Janik, “Therapeutic Nihilism”; Janik, “Weininger and the Science of Sex”; and Sengoopta, *Otto Weininger*, chapter 4.

³⁰ See Carl von Nägeli, *Mechanisch-physiologische Theorie der Abstammungslehre* (Munich: Oldenbourg, 1884). Nägeli’s introductory summary of the book was translated into English five years later: Carl von Nägeli, *A Mechanico-Physiological Theory of Organic Evolution*, trans. V. A. Clark (Chicago: Open Court, 1898). For recent contextualizing work on Nägeli and the theory of idioplasm, see Hans-Jörg Rheinberger, “Heredity and Its Entities Around 1900,” *Studies in History and Philosophy of Science* 39, no. 3 (September 1, 2008): 370–74; and Kostas Kampourakis, “Mendel and the Path to Genetics: Portraying Science as a Social Process,” *Science & Education* 22, no. 2 (2013): 293–324.

inherited traits are generally divided equally between maternal and paternal—despite the significantly larger size of the ovum compared to the spermatozoon—Nägeli theorized that a portion of gamete protoplasm must be devoted to the transmission of hereditary traits. He referred to this specialized protoplasm as “idioplasm,” and speculated that sperm and egg cells must carry roughly equal quantities of the substance. (Given their respective sizes, this meant that sperm would be composed almost entirely of idioplasm, while eggs would be composed almost entirely of regular protoplasm.) As the fertilized zygote develops into a multi-celled organism, the newly combined maternal and paternal idioplasms would distribute themselves throughout each new cell of the body, meaning that each cell would contain in microcosm the inherited data of the species. Although this theory agrees in many respects with today’s understanding of genetic inheritance (particularly with cellular meiosis), it suffered from abstractness and a lack of biological precision. As Nägeli’s contemporary E. B. Wilson noted, “Nägeli made no attempt to locate the idioplasm precisely or to identify it with any of the known morphological constituents of the cell. It was somewhat vaguely conceived as a network extending through both nucleus and cytoplasm, and from cell to cell throughout the entire organism.”³¹ As we shall see, these problems are found in Weininger’s biological theories as well.

As Allan Janik, Chandak Sengoopta, and others have noted, Weininger was well-versed in the biological theories of his day—particularly so for a twenty-three-year-old student of philosophy. Weininger was keen to use his knowledge of science to prop up the validity of his theories; consequently, “Scientific discourse is almost omnipresent” in *Sex and Character*,

³¹ E. B. Wilson, *The Cell in Development and Heredity* (New York: Macmillan, 1896), 300–301, quoted in Sengoopta, *Otto Weininger*, 73.

including the second part of the book.³² But Weininger was not a scientist, and he appropriated biological research for his own purposes in a manner inconsistent with the principles of scientific research. Many of his arguments take one particular point from a theory, reproduce it out of context, and then transform it, on the basis of speculation, into something quite different. In the case of Nägeli, Weininger modified the idea of inherited idioplasm distributed throughout the cells of the body to correspond to his theory of sexual difference.

As Weininger openly admitted, “At present our empirical knowledge does not enable us to determine... what may actually constitute the masculinity or femininity of a cell.”³³ But despite the failure of science thus far to identify a precise “histological or molecular-physical or indeed chemical” structure, Weininger assumed that masculinity and femininity *must* have some sort of material, biological basis. And so, just as Nägeli had assumed the existence of idioplasm, Weininger declared that “*we too can, and must, create the concepts of arrhenoplasm and thelyplasm as the two modifications in which any idioplasm can appear in sexually differentiated beings.*”³⁴ In other words, these two hypothetical plasms, newly proposed by Weininger, would (once discovered) constitute the empirically quantifiable biological essence of M and W.

As with his earlier postulation of M and W, Weininger quickly qualifies his assertion by claiming that arrhenoplasm (the masculine plasm) and thelyplasm (the feminine plasm) “stand for *ideal cases*, or boundaries, *between* which empirical reality resides.”³⁵ In other words, no actually existing creature possesses only arrhenoplasm or only thelyplasm; rather, every organism possesses some mixture of the two—and it is the precise mixture of plasm within an

³² *Ibid.*, 69.

³³ Weininger, *Sex and Character*, 18.

³⁴ *Ibid.*, 20.

³⁵ *Ibid.*, 20.

organism that determines its overall sexual biology on the spectrum between absolute Man and absolute Woman. Thus, it becomes (theoretically) possible to enact in an empirical manner Weininger's earlier proposal that we should refer to organisms according to the fractions of M and W that they contain. By measuring an organism's quantity of arrhenoplasm against 'his' or 'her' quantity of thelyplasm (and also taking account of endocrinological "inner secretions," which may modify an organism's "original sexual characteristics" to some degree), one could refer to an organism as being (for example) 70% W and 30% M.³⁶ This theory, then, is not at all about determining *which* organisms are sexually intermediate (because *all* are intermediate), but rather about determining the *degree* of sexual intermediacy of any given organism.

Weininger's Theory of Sexual Intermediacy in Intellectual Context

In many ways, Weininger's ideas are a return to the classical model of sexual difference, which held that all people are essentially the same sex, with individual men and women being mere

³⁶ Ibid., 25. In Weininger's theory, the fractions of M and W always add up to 100%. On the subject of endocrinology, Weininger concedes that the "organs of internal secretion" must have some function in determining an organism's sex in a given moment, but he is unsure of the extent of their ability to modify an organism's "original sexual characteristics." Remarkably, he proposes that an experiment where brother and sister test animals have their gonads swapped—an experiment, that is, which closely resembles Eugen Steinach's famous guinea pig experiment of 1912 (discussed in chapter 2)—would be necessary for determining that extent (ibid., 22). I do not know whether Steinach read *Sex and Character*—I cannot recall any references to Weininger in Steinach's writing—but it would have been almost impossible for Steinach not to have at least some familiarity with Weininger's ideas. According to Sengoopta, Weininger was also the first to develop a glandular theory of homosexuality, which speculated that homosexuality could be cured through supplements of testicular extracts. This bears a fair degree of similarity to experiments on homosexuality conducted by Steinach in the late 1910s (discussed in chapter 3). In this case, however, it is quite unlikely that Steinach could have gotten the idea from Weininger, as the latter apparently only recorded it in an unpublished draft from 1901. Chandak Sengoopta, *The Most Secret Quintessence of Life: Sex, Glands, and Hormones, 1850–1950* (Chicago: University of Chicago Press, 2006), 253n59. See also (in this dissertation) chapter 2, note 66; and chapter 3, note 112.

variations upon that single type according to the quantity of humoral heat.³⁷ Like Weininger's theory, the classical model did not allow for absolute biological distinctions between sexual types. Both systems of sexual difference were explicitly hierarchical and sexist: the more biological masculinity (whether heat or arrhenoplasm) an organism possesses, the more superior it is. But Weininger conceived of his theory within an intellectual climate where the modern binary system of sex reigned, and his theory was fundamentally a modification of the two-sex model (to use Laqueur's terminology). Where the ancients assumed a single factor of sex determination, Weininger assumed that there must be two. Note, for example, how Weininger found it necessary to modify Nägeli's hypothetical idioplasm (a one-substance theory) into arrhenoplasm and thelyplasm (a two-substance theory). (Here, one wonders whether perhaps Weininger objected to the implicit equivalence in Nägeli's theory between paternal and maternal idioplasm.) Although Weininger's thought (including but not limited to his ideas about sexual difference) is quite frequently marked by spectral thinking, his spectra are always, at base, an extension of a binary system.

Although some commentators have proposed that Weininger's philosophy and politics might be characterized as "progressive anti-modernism," his thought reflects the dominant binarism of his age (even as he expands upon that binarism).³⁸ As Rita Felski observes, the

³⁷ See Thomas W. Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* (Cambridge, MA: Harvard University Press, 1990), as well as the introduction to this dissertation.

³⁸ Steuer, "A Book That Won't Go Away," xxxi–xxxvii. Weininger's politics are more difficult to peg down than might be expected. For a typical denunciation of Weininger as an example of Jewish self-hatred, see Peter Gay, *Freud, Jews, and Other Germans: Masters and Victims in Modernist Culture* (Oxford: Oxford University Press, 1978), 195–96. For a surprising reading of Weininger as a liberal, see Steven Beller, "Otto Weininger as Liberal?," in *Jews and Gender: Responses to Otto Weininger*, ed. Nancy A. Harrowitz and Barbara Hyams (Philadelphia: Temple University Press, 1995), 91–102. Sengoopta's book on Weininger provides perhaps the best and most nuanced take on Weininger's political beliefs.

nineteenth century saw the enshrinement of social binary logic that established “increasingly rigid boundaries between private and public selves, so that gender differences solidified into apparently natural and immutable traits.” However, Felski continues, this period also featured frequent contestations of such binary structures (for example, women moving into the work place, or the feminist movement).³⁹ In this respect—that is, in relying upon binarism but also pushing beyond or expanding such structures—Weininger is an exemplary of his modern age.

Many aspects of Weininger’s theory of sexual intermediacy were novel, but he was not the first to propose an idea of non-binary sex within a modern scientific framework. Sengoopta claims that “Virtually every nineteenth-century biologist would have agreed with [Weininger]” that “individual humans never belonged exclusively and totally to one sex but possessed elements of both sexes.”⁴⁰ In the remarkably detailed appendix to *Sex and Character*, Weininger cites work on embryological amphisexuality from the 1820s and 1830s.⁴¹ Closer to Weininger’s own time, Charles Darwin and August Weismann (among others) had proposed that the laws of inheritance require that sexually differentiated organisms possess latently the characteristics of

³⁹ Rita Felski, *The Gender of Modernity* (Cambridge, MA: Harvard University Press, 1995), 18–19.

⁴⁰ Sengoopta, *Otto Weininger*, 47.

⁴¹ Weininger, *Sex and Character*, 315–16. The specific works cited by Weininger are: Heinrich Rathke, “Beobachtungen und Betrachtungen über die Entwicklung der Geschlechtswerkzeuge bei den Wirbeltieren,” *Neueste Schriften der naturforschenden Gesellschaft in Danzig* 1, no. 4 (1825); Johannes Müller, *Bildungsgeschichte der Genitalien aus anatomischen Untersuchungen an Embryonen des Menschen und der Thiere, nebst einem Anhang über die chirurgische Behandlung der Hypospadias* (Düsseldorf: Arnz, 1830); and Gabriel Valentin, “Über die Entwicklung der Follikel in dem Eierstocke der Säugetiere,” *Archiv für Anatomie, Physiologie und wissenschaftliche Medicin*, 1838, 526–35. He also cites more recent embryological work: Robert Remak, *Untersuchungen über die Entwicklung der Wirbeltiere* (Berlin: G. Reimer, 1855); and Wilhelm Waldeyer, *Eierstock und Ei. Ein Beitrag zur Anatomie und Entwicklungsgeschichte des Sexualorgane* (Leipzig: Wilhelm Engelmann, 1870).

the opposite sex, thus creating a form of dormant biological bisexuality.⁴² In 1899 (four years prior to the publication of *Sex and Character*) Magnus Hirschfeld's Scientific-Humanitarian Committee had launched its scientific journal, *Jahrbuch für sexuelle Zwischenstufen* (Yearbook for Sexual Intermediaries); Hirschfeld and the other editors evidently believed that readers—or academic readers, at any rate—were sufficiently familiar with the idea of sexual intermediacy that they would be willing to subscribe to a journal focusing on the subject.

However, among these various proponents of sexual intermediacy, Weininger is notable in at least two respects. First, Weininger was not a scientist. Although he was well-versed in the scientific literature of the turn of the century, *Sex and Character* is fundamentally a work of philosophy and social theory. This meant that the book reached a far different and also (despite its occasionally painful erudition) significantly wider audience than did scientific journal articles and monographs. August Weismann was not regularly featured in the pages of *Die Fackel*; Weininger was.⁴³ Weininger was quite likely the first intellectual of any note to expound on the idea of sexual intermediacy to a non-scientific (albeit still highly educated) audience. Other public intellectuals from the early twentieth century who discussed the idea of sexual intermediacy (such as Magnus Hirschfeld, Sigmund Freud, and Rosa Mayreder) frequently did

⁴² See Charles Darwin, *The Variation of Animals and Plants Under Domestication*, 1st ed., 2 vols. (London: John Murray, 1868); and August Weismann, *Das Keimplasma. Eine Theorie der Vererbung* (Jena: Fischer, 1892). These two works are quoted by Weininger at some length in the appendix. Weininger, *Sex and Character*, 318–19. Rosa Mayreder also made similar arguments in the service of denying absolute distinctions between the sexes; I discuss this below.

⁴³ Although I cannot be certain that Weismann was *never* mentioned in any of the 415 issues of *Die Fackel*, the complete run of the journal has been digitized, and is available online at <http://corpus1.aac.ac.at/fackel/>. Searching the digitized text for 'Weismann' (and also for 'Keimplasma') produces zero results. Even 'Darwin' produces only nine results. But 'Weininger' produces 137 results. On Karl Kraus and *Die Fackel*'s relationship with Weininger, see Timms, *Karl Kraus* (1986), esp. 88–93.

so in response to *Sex and Character*.⁴⁴ For example, Freud noted in a footnote (added in 1924) to his *Three Essays on the Theory of Sexuality* that

In lay circles the hypothesis of human bisexuality is regarded as being due to O. Weininger, the philosopher, who died at an early age, and who made the idea the basis of a somewhat unbalanced book. The particulars I have enumerated above will be sufficient to show how little justification there is for the claim.⁴⁵

Although Freud denied Weininger's priority on the subject of bisexuality (that is, of sexual intermediacy), the apparent necessity of the footnote gives evidence to the degree to which

⁴⁴ Hirschfeld would go on to cite Weininger in several of his works, with the first citation appearing as early as 1905. In 1910 he referred to *Sex and Character* as the first book from recent (rather than ancient) times to discuss the theory of intermediacy. Magnus Hirschfeld, *Geschlechtsübergänge. Mischungen männlicher und weiblicher Geschlechtscharaktere. (Sexuelle Zwischenstufen)* (Leipzig: W. Malende, 1905), 15; Magnus Hirschfeld, *Die Transvestiten. Eine Untersuchung über den erotischen Verkleidungstrieb* (Berlin: Alfred Pulvermacher & Co., 1910), 294n1. As we shall see in chapter 4, Hirschfeld had already begun to develop his own theory of sexual intermediacy even before *Sex and Character* appeared; his journal was founded in 1899 to investigate the principle, and the roots of Hirschfeld's theory of sexual intermediacy can be seen as early as his first sexological work, the pamphlet *Sappho und Sokrates, oder Wie erklärt sich die Liebe der Männer und Frauen zu Personen des eigenen Geschlechts?* (Leipzig: Max Spohr, 1896). However, the print circulation of Hirschfeld's early work was quite small (likely only a few hundred copies per publication), limiting the public impact of his ideas. Over the next several years, Hirschfeld's thinking on sexual intermediacy would become more universal, possibly prompted in part by Weininger's work.

Freud, for his part, began writing on sexual intermediacy at least as early as his 1905 volume *Three Essays on the Theory of Sexuality*. It is worth noting, however, that Freud's writing was not widely read outside specialist circles until after the 1917 publication of his *Introductory Lectures on Psychoanalysis* (see Peter Gay, "Sigmund Freud: A Brief Life," in *Civilization and Its Discontents*, by Sigmund Freud (New York: Norton, 1989), ix–xxii, at xix). As noted above, Freud's thoughts on sexual intermediacy (which he usually referred to, following the standard usage of the late nineteenth and early twentieth century, as 'bisexuality') owe some debt to Weininger, as well as to his one-time friend Wilhelm Fliess (who would accuse Weininger of plagiarism in 1904, after the latter's suicide; for more on this episode, see note 14, above). For Freud's thoughts on bisexuality, see Sigmund Freud, *Three Essays on the Theory of Sexuality*, in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, trans. James Strachey, vol. 7 (1905; London: Hogarth, 1953), 123–248, at 141–45; and Sigmund Freud, *Civilization and Its Discontents*, trans. James Strachey (1930; New York: Norton, 1989), 61–63n7.

⁴⁵ Freud, "Three Essays," 143n.

Weininger was responsible for the proliferation of the idea of a sexual spectrum in the early twentieth century.⁴⁶

Second, Weininger attempted to put forward a theory of universal scope. Other scientific figures of that time had articulated theories that allowed for sexual intermediacy, but these always (or almost always) assumed that intermediate individuals are exceptions to the norm, and that most people can be easily sorted into categories of male and female.⁴⁷ This can be seen, for example, in *fin-de-siècle* medical work on the problem of hermaphroditism. As Alice Dreger has shown, doctors at the turn of the century generally regarded most apparent hermaphrodites as being in reality mere *pseudohermaphrodites*—that is, people who possessed atypical genitalia but whose biological sex could be precisely identified through observation of their gonads (that is, of their ovaries or testicles).⁴⁸ As Dreger shows, the gonads were held to possess the unambiguous ‘truth’ of a pseudohermaphrodite’s biological sex. In this way, many doctors allowed for a small amount of sexual intermediacy (that is, in the rare cases of ‘true’ hermaphroditism), while still being able to assign the vast majority of people into their ‘proper’ place in the sexual binary.⁴⁹ For another example, Darwin and Weismann’s theories of inheritance required some presence of ‘opposite’ sex traits within a given individual to explain the resemblances of female organisms to

⁴⁶ On the terminological history of ‘bisexuality,’ see Merl Storr, ed., *Bisexuality: A Critical Reader* (New York: Routledge, 1999); and Steven Angelides, *A History of Bisexuality* (Chicago: University of Chicago Press, 2001).

⁴⁷ Hirschfeld’s early work (before 1905) probably counts as an exception. See note 44, above.

⁴⁸ See Alice Domurat Dreger, “Hermaphrodites in Love: The Truth of the Gonads,” in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1996), 46–66, as well as her subsequent book, which contains a revised version of this article: *Hermaphrodites and the Medical Invention of Sex* (Cambridge, MA: Harvard University Press, 1998).

⁴⁹ Weininger claims in an aside that it would be “easy for us to incorporate in our system pseudohermaphroditism and even genuine hermaphroditism.” This indicates that he considered the concept of hermaphroditism as relevant to his theory of sexual intermediacy. Weininger, *Sex and Character*, 17.

their paternal grandmothers and of male organisms to their maternal grandfathers. But such presence was really a technicality—the traits remained latent and had no real effect on the life of an organism.⁵⁰ The Darwinian bull that passes his mother’s good milk-making trait onto his daughter is not considered to be any less male simply because that trait lies dormant within him.

In contrast to these cases, Weininger asserts that *everyone* is a sexual intermediate, and that *everyone* possesses some mixture of male and female biological matter. The presence of ‘opposite’ sex plasm does not result in mere latent traits, but in actual somatic and intellectual effects. Weininger himself was quite aware of this difference in his theory compared to others. In the index to *Sex and Character*, he notes the recent appearance (in 1899) of Hirschfeld’s *Yearbook for Sexual Intermediaries*, and he offers the following backhanded compliment: “This enterprise [the journal] would be even more commendable than it is, if it did not take into consideration only homosexuals and born hermaphrodites, i.e., those forms situated *midway* between the sexes.”⁵¹ In other words, Hirschfeld’s journal was (in Weininger’s view) flawed, because it assigned intermediary status to only a small set of the population, rather than to all humans universally. In the main text of the book, Weininger states this more directly: “until today the term ‘intermediate sexual stages’ has been applied only to the *midway* stages between the sexes, as if, mathematically speaking, these were a particular *point of concentration and were*

⁵⁰ In the appendix to *Sex and Character*, Weininger supplies the following quotation from Darwin’s *Variation of Animals and Plants under Domestication* (1868): “We thus see that in many, probably in all cases, the secondary characters of each sex lie dormant or latent in the opposite sex, ready to be evolved under peculiar circumstances. We can thus understand how, for instance, it is possible for a good milking cow to transmit her good qualities through her male offspring to future generations; for we may confidently believe that these qualities are present, though latent, in the males of each generation.” Darwin, *The Variation of Animals and Plants Under Domestication*, 2:52. (Weininger cites the German translation of 1873; I have quoted Darwin’s original text. Weininger, *Sex and Character*, 318–19.) In the same appendix entry, Weininger also provides a similar passage from Weismann’s *Das Keimplasma* (1892).

⁵¹ Weininger, *Sex and Character*, 319.

something more than just one small stretch along a connecting line between two extremes which is equally densely occupied at every point."⁵² Although Weininger's theory suffers from assuming the existence of arrhenoplasm and thelyplasm without any actual proof of their existence and without any idea about where these plasms would be situated within the cell, these two factors (namely, Weininger's reach and popularity; and the universal range that his theory claimed) mark the theory out as historically significant, even in comparison with contemporary competitors from the natural sciences who could offer more in the way of justified (or apparently justified) scientific claims. As we shall see, these two factors also characterize the work of Rüling and Mayreder.

Applications of Weininger's Spectrum

Whatever its problems at an empirical level, Weininger's sexual spectrum allowed him to do some interesting things. For example, he followed the Danish zoologist Johannes Japetus Smith Steenstrup in asserting that "*sex is present everywhere in the body,*" and not just in the gonads and the organs of copulation.⁵³ In his own biological theory, this means that for Weininger every cell contains both arrhenoplasm and thelyplasm. Indeed, Weininger maintained that the M/W ratio varies not only from organism to organism, but also from cell to cell. "It is by no means the case that all the cells of a body show the same M or W content, i.e., the same approximation to arrhenoplasm or thelyplasm," he claimed; in fact, it is even possible that some cells within a

⁵² Ibid., 14; translation altered slightly.

⁵³ Ibid., 16. The Steenstrup work that Weininger cites is J. J. S. Steenstrup, *Untersuchungen über das Vorkommen des Hermaphroditismus in der Natur*, trans. C. F. Hornschuch (Greifswald, 1846).

given organism will fall “on different sides of the point of indifference between these poles.”⁵⁴

As evidence for this assertion, Weininger notes that many people have secondary sexual characteristics of varying “strength,” pointing to such phenomena as “fairly distinctive males with quite weak beards or muscles, or almost typical females with small breasts.”⁵⁵ In other words, not only do all organisms fall on a sexual spectrum between M and W, but also each organism contains within itself the same sexual spectrum in microcosm, distributed among every cell of its body. This nested-spectrum theory of biological sex allows for a functionally infinite diversity of biological sexes; still, Weininger remarks that “In general, *one* index for the *whole* body will be sufficient” for most purposes, meaning that overall sex will never be anything more than an average.⁵⁶

Although Weininger does not say so, this move (from each cell having its own sexual composition, to the general validity of an average index for the whole body) is perhaps necessary to give his theory the ability to explain not only somatic but also intellectual differences between the sexes.⁵⁷ While one could easily imagine a case where a man had more W in his facial follicular cells than in his muscle cells (thus producing Weininger’s example of a man with strong muscles but a weak beard), it is more difficult to see how this would play out when discussing the cells of the brain. There, the difficulty of sharply separating the functions of each cell would seem to require an average of M/W ratios, rather than individual cellular sexes. But regardless of its impetus, this “index” allows for Weininger to describe each person,

⁵⁴ Weininger, *Sex and Character*, 20.

⁵⁵ *Ibid.*, 20.

⁵⁶ *Ibid.*, 24.

⁵⁷ Notably, Weininger does not discuss cellular differences in sexual biology within a given organism in the chapter where he investigates intellectual differences between the sexes within the framework of his theory of sexual intermediacy. See *ibid.*, part 1, chapter 5.

intellectually speaking, in terms of *one* sexual type (per person), rather than as a confused array of internally competing masculinities and femininities.⁵⁸ Here we can also see a foreshadowing of the move Weininger makes in the second part of the book, where he (mostly) discards his biological sexual spectrum in favor of a psychological sexual binary (more on this below).

Weininger also uses his sexual spectrum to develop a science of sexual attraction, in which he attempts to explain this phenomenon as predictable according to natural laws. At root, these laws are nothing more than elaborations and codifications of common sayings, such as ‘the right person will come along’ or ‘opposites attract.’ While Weininger thinks that such received wisdom is often correct, he rejects it as being “too general” and as “admit[ting] no mathematical formulation whatsoever.”⁵⁹ Instead, he proposes (as his first law) that “*It is always a **complete** Man (M) and a **complete** Woman (W) who strive to join in sexual union.*”⁶⁰ In other words, the most powerful sexual attraction will occur between two people who are each other’s sexual inverses, such that their individual fractions of M and W will each add up to 100%. Individuals with a high M and low W would be attracted to individuals with high W and low M, and *vice versa*. The closer another person is to forming one’s sexual inverse, the higher the sexual attraction will be.⁶¹ Because it requires that all people be sexually intermediate (in some

⁵⁸ See Weininger’s comment that his theory “will facilitate an *individualizing* description of all human beings,” rather than regarding them psychologically as being “*simply male* or *simply female*.” Ibid., 45.

⁵⁹ Ibid., 28.

⁶⁰ Ibid., 29.

⁶¹ Weininger also supplements this law with a few other stipulations—for example, sexual attraction is also higher if the people have known each other for longer and if they are of the same race and culture, all else being equal. But the rule of sexual complements is the core of the theory.

proportion or another), this is a theory of sexual attraction that can be thought of only in the context of a full-fledged sexual spectrum.

Weininger builds upon this law to explain homosexuality. In his theory, homosexuals are those who sit near the middle of the sexual spectrum, with nearly equal fractions of M and W. This in itself was not a particularly innovative description; sexual intermediacy as an explanation for homosexuality was hardly new in 1903.⁶² Other contemporary theories tended to focus on homosexuals as constituting an abnormal group, a ‘third sex,’ in contrast to the presumed normality of heterosexual people. However, within Weininger’s law of sexual attraction, the sexual inverse—and thus the natural sexual partner—of a homosexual man or woman would be another person in the middle of the spectrum, i.e., another homosexual.⁶³ As he puts it, “*sexual inversion is not an exception from the natural law, but only a special case of the same.*”⁶⁴

⁶² Theories of homosexuality as sexual (or gender) intermediacy go back at least as far as Karl Heinrich Ulrichs, who famously described male homosexuality as *anima muliebris virili corpore inclusa* (a woman’s soul trapped in a male body). Ulrichs was a major influence on Richard von Krafft-Ebing and Magnus Hirschfeld, and much of their thinking on homosexuality operated within an Ulrichsian framework of intermediacy. Ulrichs’s work has been translated into English somewhat recently: Karl Heinrich Ulrichs, *The Riddle of “Man-Manly” Love: The Pioneering Work on Male Homosexuality*, trans. Michael A. Lombardi-Nash, 2 vols. (1864–79; Buffalo, N.Y.: Prometheus Books, 1994). For more on Ulrichs, see Hubert Kennedy, “Karl Heinrich Ulrichs: First Theorist of Homosexuality,” in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1997), 26–45; and Ralph M. Leck, *Vita Sexualis: Karl Ulrichs and the Origins of Sexual Science* (Urbana: University of Illinois Press, 2016). The quantity of work on Krafft-Ebing is quite large, but on his relationship to homosexual patients, see in particular Harry Oosterhuis, *Stepchildren of Nature: Krafft-Ebing, Psychiatry, and the Making of Sexual Identity* (Chicago: University of Chicago Press, 2000). On Hirschfeld, see chapter 4 of this dissertation.

⁶³ This theory also implies that gay men and lesbians ought also to be sexually attracted to each other, which is only rarely the case in reality. Weininger somewhat addresses this problem by pointing to examples of extremely feminine men (such as Chopin, whom he describes as “the only female musician”) having relationships with extremely masculine women (such as George Sand). But this does not solve the root of the problem. Weininger, *Sex and Character*, 59.

⁶⁴ *Ibid.*, 44.

Moreover, because every cell of the body contains a different mixture of arrhenoplasm and thelyplasm, it becomes not only possible, but actually expected, that some people will exist who visibly appear to be of one sex, even while their overall “index” of M/W places them biologically on the other side of the spectrum.⁶⁵ For such people, attraction to others who appear visually to belong to the same sex would be the expected outcome, as they would instinctively recognize the M/W ratios of their natural counterparts. “[T]his,” Weininger exclaims, is “the powerful factor that always causes homosexuals to recognize each other.”⁶⁶ Dubious assertions about the unfailing accuracy of gaydar aside, Weininger, perhaps surprisingly, treats homosexuality with a fair amount of compassion here, arguing that there is no ethical difference between different kinds of sexual desire. Consequently, he strongly advocates the decriminalization of homosexuality: “It is utterly reprehensible,” he tells the reader, “to forbid homosexuals to pursue their way of sexual intercourse.”⁶⁷

Although Weininger claims that he is not yet in a position to “uncover *all* the laws of sexual attraction”—in *Sex and Character*, he only aims to demonstrate that such laws do exist—he claims that once all these laws have been discovered, it will be possible to precisely determine

⁶⁵ Weininger’s theory of homosexuality also stipulates that most homosexuals can be identified by their somatic androgyny. Apart from one small distinction, Weininger boasts that “it can be boldly claimed that every sexual invert also exhibits the anatomical characteristics of the opposite sex. There is no such thing as purely ‘psychosexual hermaphroditism.’” *Ibid.*, 41. This is a theory of somatic homosexuality with which Eugen Steinach and Magnus Hirschfeld substantially agreed.

⁶⁶ *Ibid.*, 45.

⁶⁷ *Ibid.*, 45. One of the perennial questions of Weininger scholarship is whether he himself was a closeted homosexual. Such is certainly possible; however, there is no confirming evidence one way or the other. (Indeed, in Sengoopta’s estimation, there is no evidence that he ever had sex with anybody else at all. Sengoopta, *Otto Weininger*, 15–16.)

the ideal sexual match for any given person.⁶⁸ He believed that such laws make sexual attraction entirely predictable, so that, for example, adultery could be explained as the natural result of having a stronger sexual attraction to another person than to one's spouse. "*Adultery takes place,*" he argues, "as an elemental event, a natural phenomenon, just as when FeSO₄ is brought together with 2 K OH, and the SO₄ ions at once abandon the Fe ions in order to cross over to the K ions." Such attractions, he maintains, are properly within the realm of nature, rather than that of morality.⁶⁹

Unsurprisingly, Weininger also puts his sexual spectrum to explicitly (rather than merely implicitly) misogynist purposes. When he turns to address "the Woman Question" directly, in the final chapter of the first part of the book, he advances the argument that "*a woman's need for emancipation, and her capacity for emancipation, derive exclusively from the proportion of M in her.*"⁷⁰ For Weininger, M represents not only a biological proclivity to muscles and facial hair, but also the psychological principle of intellect, activity, and morality. Thus he explains that the greatest female artists have all "come exclusively from the ranks of the *more advanced* intermediate sexual forms... which are barely classified as 'women.'"⁷¹ But even in these cases, such great women will by necessity "probably never contain more than 50 percent of M," and thus "not one among *all* (even the most masculine) women in intellectual history [*Geistesgeschichte*] can truly bear comparison *in concreto* with even fifth- and sixth-rate male

⁶⁸ Weininger, *Sex and Character*, 28. Weininger was unsuccessful at demonstrating that *any* laws of sexual attraction exist. Ultimately, his evidence for the existence of these laws is nothing more than his own observations, and those of his friends.

⁶⁹ *Ibid.*, 37. Weininger follows up by arguing that this is also "the fundamental idea of Goethe's *Elective Affinities*."

⁷⁰ *Ibid.*, 57.

⁷¹ *Ibid.*, 58.

geniuses.”⁷² In addition to being the only women who can approach artistic greatness, such masculine women are also the only ones among their sexual half to desire emancipation. By this term, Weininger chiefly means “a woman’s *will to become internally equal* to a man, to attain his intellectual and moral freedom, his interests and creative power.”⁷³ He claims that since such a will is a product of M, this means that exceptional (i.e., masculine) women have already *achieved* emancipation, while the remaining women have no capacity for it, or indeed any wish for it. In a *tour de force* of *chutzpah*, the women’s movement is thus discarded as undesirable for most women and unnecessary for the rest.⁷⁴

After this point in the book, Weininger moved away from the biological sexual spectrum that he had spent almost a hundred pages (in the German text) elaborating. For the rest of the book, he instead built up a psychological sexual binary that is, in many ways, sharply disjunctive with the spectrum of the first part. And yet Weininger seemed to be unable to do away with a spectral mode of thinking. Quite a few of his arguments can be understood in terms of a spectrum, and, ultimately, most of his spectra refer back to the *sexual* spectrum. When describing genius, for example, Weininger makes it clear that just as ideal Man and ideal Woman do not exist in reality, so too are ideal geniuses and ideal anti-geniuses non-existent. Instead, there is a range of genius, with all people possessing at least some capacity. Weininger brings the discussion back to sex almost immediately, however, with a tossed-off statement that “at least no

⁷² Ibid., 62; 61.

⁷³ Ibid., 58.

⁷⁴ At the end of the book, to add a twist of the bizarre, Weininger claims that “*Woman and Man have equal rights*,” but denies that women should “be granted a share in political power.” This statement is followed shortly by the most puzzling sentence in the entire work: “this book is the greatest homage ever paid to women.” Ibid., 306–7.

male being is entirely without genius.”⁷⁵ This makes sense within Weininger’s system—anyone who is ‘male’ must have at least some biological masculinity—that is, some M—within them. As Weininger tells us repeatedly, masculinity and “endowment [*Begabung*]” (i.e., capacity for genius) are linked.⁷⁶ What this means is that the spectrum of genius (or endowment) is at least correlated with the spectrum of sex, and it may be that former is in fact fully reducible to the latter.

Indeed, given that in Weininger’s view one of the primary attributes of the man of genius is a superior memory—such that all the moments of his life seem connected—perhaps it may even be said that one attribute of the Weinigerian genius is *the ability to think spectrally*. Moreover, “this *essential* continuity which alone can fully assure a human being that he is *alive*, that he exists, that he is in the world—which is all-embracing in a genius and restricted to a few important moments in mediocre persons—is **totally absent in women**.”⁷⁷ Elsewhere, Weininger refers to the masculine genius as “a continuous self”: “Epistemological consciousness and the possession of a continuous self, or the transcendental subject and the soul, are synonymous and interchangeable concepts.”⁷⁸

Such spectral thinking informs Weininger’s entire conception of biology. He tells us that “the main difference between organic matter and inorganic matter is that the former is *always* differentiated into heterogenous parts that are dependent on each other, while even a fully

⁷⁵ Ibid., 102.

⁷⁶ See especially *ibid.*, 102n2. Note that, unlike the English word ‘endowment,’ the German word *Begabung* does not carry the euphemistic meaning of a large penis.

⁷⁷ Ibid., 109.

⁷⁸ Ibid., 163.

formed crystal is homogenous throughout.”⁷⁹ In other words, Weininger conceives of organic matter as different elements smoothly combined into a larger—although still heterogenous—whole. This means that, for Weininger, an organic body is *itself* a spectrum. This position makes sense given his philosophical emphasis on individualism.⁸⁰ Just as society is nothing but a collection of individuals, so too is each individual potentially a microcosm of the larger spectrums observable at the social level. The greatest microcosm of all, for Weininger, is the man of genius who “*has the whole world in him*” because “*genius is the living microcosm*.”⁸¹ Declaring a similarity to Leibniz, who distinguished (in his “rarely understood theory”) between lower and higher monads, Weininger distinguishes between those who are conscious of their connection with the universe and those who are unconscious of it: “*The person of genius [der geniale Mensch] is the actual microcosm, the person without genius is the potential microcosm*.”⁸² As he writes in summation, with double-emphasis, “*A human being may be called a genius if he lives in a conscious connection with the whole universe*.”⁸³

In *Sex and Character*, the better something is, the more it is connected, continuous, and masculine. Conversely, the worse (or, perhaps, less good) something is, the more it is disconnected, isolated, and feminine. For Weininger, everything that is masculine is spectral; everything that is feminine is non-spectral. Male thought is characterized by sequences, whereby

⁷⁹ Ibid., 134.

⁸⁰ As Weininger puts it, “Logic and ethics are fundamentally one and the same thing—duty to oneself.” Ibid., 139.

⁸¹ Ibid., 148.

⁸² Ibid., 151; translation modified slightly. See Gottfried Wilhelm Leibniz, *The Monadology*, in *The Monadology and Other Philosophical Writings*, trans. Robert Latta (1714; Oxford: Clarendon Press, 1898).

⁸³ Weininger, *Sex and Character*, 149.

initial *henids* (Weininger's phrase for pre-conscious perceptions) become elaborated into proper conceptions;⁸⁴ female 'thought,' in contrast, stays mostly or entirely within the *henid* stage. The ideas of the spectral male and of the atomistic female clearly function as intellectual lenses for Weininger, as filters through which he processes his other thoughts. For example, when M sees connections between disparate phenomena, it is because he has attained genius, a universal self that contains and reflects the whole world. When W does the same, it is because of Woman's "lack of conceptual clarity... which grants unlimited rights to vague associations between quite dissimilar things."⁸⁵ In Weininger's understanding, geniuses (who are the most masculine individuals)⁸⁴ have the ability to grasp what connects phenomena together, but non-geniuses (a category that includes all women, as well as less masculine men) can only flit from one phenomenon to the next. The fact that Weininger here accords to the same act—finding associations between different phenomena—totally different valuations seems to go quite unnoticed by him.

From Weininger to Feminism

In the end, *Sex and Character* fails (on its own terms) in tracing "all the contrasts between Man and Woman back to a single principle." Instead, it identifies two different principles—one for each part of the book. The first part, which has been the main object of my analysis above, consists primarily of idiosyncratic applications and extensions of existing biological theory, out of which Weininger constructs the view that every organism exists in a state of sexual intermediacy. But in the second part Weininger immediately announces that the biological

⁸⁴ Cf. *ibid.*, 165.

⁸⁵ *Ibid.*, 164.

findings of the first part must be discarded as soon as one begins to consider psychology.⁸⁶ “Now that *the human being* [der Mensch] is to become the object of consideration even more exclusively than before,” he writes in the first paragraph of the second part, “The universal claim of the principle of intermediate sexual stages must undergo a significant qualification.” More specifically: “Among plants and animals the occurrence of genuine hermaphroditism is a fact established beyond any doubt.” However, “With *the human being*... it may be said with the greatest certainty that *psychologically* a person *must necessarily be either male or female*, initially at least at one and the same time.”⁸⁷ In other words, while human *bodies* exist on a sexual spectrum, human *minds*—or souls—do not.

So far, so dualistic. But the body and soul are not so easily separated, and this uneasy tension between spectral biology and non-spectral psychology pops up throughout the second part of the book with distinct regularity.⁸⁸ Given that the primary task of the second part is to prove philosophically that “**The absolute Woman has no self [kein Ich],**” it becomes entirely unclear exactly why men have souls—meaning, in Weininger’s terminology, free will and the capacity for logic and ethic—but women do not.⁸⁹ As Rosa Mayreder insightfully noted in 1905, “According to the postulates of [Weininger’s] original biologico-psychological observation,” one is prompted to ask: “At what degree of masculinity does the soul begin?”⁹⁰ This is a question that

⁸⁶ By ‘psychology,’ Weininger meant the sort of introspective philosophy practiced by Kant and Nietzsche. He was emphatically opposed to the materialist psychology that he saw as predominating in turn-of-the-century Europe, which was for him exemplified above all in the work of Ernst Mach. *Ibid.*, 70–74.

⁸⁷ *Ibid.*, 69; translation slightly altered.

⁸⁸ On the tension between biology and (philosophical) psychology in Weininger’s argumentation, see Sengoopta, *Otto Weininger*, chapter 3.

⁸⁹ Weininger, *Geschlecht und Charakter*, 240 [161]; “Das absolute Weib hat kein Ich.”

⁹⁰ Mayreder, *Survey*, 24.

Sex and Character is ultimately incapable of answering, at least in part because Weininger ultimately had no interest in women. His concern was only with building an image of ‘ideal’ Woman by finding supposed philosophical truth in the oldest stereotypes.⁹¹ Reality, and really existing women, play no role in Weininger’s argumentation in the second portion of the book, and rather little in the first.

While it is unsurprising that Weininger would use his theory of a sexual spectrum in the service of his misogyny, it remains an open question whether the theory is inherently sexist. It can be argued that, if removed from a hierarchical framework that assumes a superior valuation for everything masculine, the theory contains an unrealized progressive potential in its repudiation of the sexual binary. Indeed, Weininger himself understood his theory as a profoundly individualizing one that allows people to avoid being sorted into improper molds. As he put it, his theory “will facilitate an *individualizing* description of all human beings,” rather than regarding them as being psychologically “*simply male* or *simply female*.”⁹² This impulse largely aligns with that of many feminists and trans activists who have argued in the last few decades for expanding beyond the sexual binary.⁹³ This coincidence of thinking is just one reason why Weininger can be such a tough ideological nut to crack.⁹⁴ And it is because of his

⁹¹ As Weininger puts it, “The psychology used in my account is thoroughly philosophical, although its particular method, which is justified only by its particular topic, is to start out from the most trivial experiences.” *Sex and Character*, 3.

⁹² *Ibid.*, 45.

⁹³ See, for example, Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991); Sandy Stone, “The *Empire* Strikes Back: A Posttranssexual Manifesto,” in *Body Guards: The Cultural Politics of Gender Ambiguity*, ed. Kristina Straub and Julia Epstein (1991; New York: Routledge, 1991); Judith Butler, *Bodies That Matter: On the Discursive Limits of “Sex”* (New York: Routledge, 1993); and Cheryl Chase, “Hermaphrodites with Attitude: Mapping the Emergence of Intersex Political Activism,” *GLQ: A Journal of Lesbian and Gay Studies* 4, no. 2 (April 1998): 189–211.

⁹⁴ See note 38, above.

theory's implicit progressive potential, I believe, that the turn-of-the-century feminist thinkers whom I am about to examine found themselves adopting much the same understanding of sex as Weininger.

Anna Rüling: Homosexual Feminist and Conservative Patriot

I turn first to Anna Rüling (1880–1953), who was, as far as we know, the first feminist (indeed, the first woman) to proclaim a female homosexual identity in a public speech.⁹⁵ That speech, “What Interest Does the Women’s Movement Have in the Homosexual Question?” (“Welches Interesse hat die Frauenbewegung an der Lösung des homosexuellen Problems?”) was delivered at the annual assembly of Magnus Hirschfeld’s Scientific-Humanitarian Committee in Berlin in October 1904. The text of the speech was published in Hirschfeld’s sexological journal shortly afterward.⁹⁶

⁹⁵ However, as Christiane Leidinger points out, Rüling was not the first person to proclaim a female homosexual identity publicly—only the first to do so in a speech. The first known person to do so in any medium was Johanna Elberskirchen, “who made her lesbianism public in a text dated 1904 (although it was probably first published in 1903)”: *Was hat der Mann aus Weib, Kind und sich gemacht? Revolution und Erlösung des Weibes. Eine Abrechnung mit dem Mann—Ein Wegweiser in die Zukunft!*, 2nd ed. (Berlin, 1904). See Christiane Leidinger, “‘Anna Rüling’: A Problematic Foremother of Lesbian Herstory,” trans. Kathryn Brooks, *Journal of the History of Sexuality* 13, no. 4 (October 2004): 477–99, at 480. For more on Elberskirchen, see Christiane Leidinger, *Keine Tochter aus gutem Hause: Johanna Elberskirchen (1864–1943)* (Konstanz: UVK Verlagsgesellschaft, 2008).

I follow Kirsten Leng’s lead in using the somewhat-awkward term ‘female homosexual’ here; as she has noted, in the early twentieth century ‘the lesbian’ and ‘lesbianism’ indicated “individuals who were believed to engage in homosexual acts as a matter of choice” (Kirsten Leng, *Sexual Politics and Feminist Science: Women Sexologists in Germany, 1900–1933* (Ithaca: Cornell University Press, 2018), 115n.) As we shall see, such an idea is incongruent with Rüling’s self-understanding of homosexuality.

⁹⁶ Anna Rüling, “Welches Interesse hat die Frauenbewegung an der Lösung des homosexuellen Problems?,” *Jahrbuch für sexuelle Zwischenstufen* 7 (1905): 129–51. The lecture is also available in English translation: Anna Rüling, “What Interest Does the Women’s Movement Have in the Homosexual Question?,” in *We Are Everywhere: A Historical Sourcebook of Gay and Lesbian Politics*, ed. Mark Blasius and Shane Phelan, trans. Lillian Faderman and Brigitte

Thanks to the research of Christiane Leidinger, we now know that RÜling was the pseudonym of the journalist Theo A. Sprüngli.⁹⁷ Born in 1880 (the same year as Weininger) in Hamburg, Sprüngli grew up in the “strict Hanseatic atmosphere” fostered by her father, a Swiss businessman.⁹⁸ She began to write for the *Hamburger Fremdenblatt* at seventeen, marking the beginning of a long career in journalism. Over the course of her life she contributed to a number of journals and newspapers around Germany, with the bulk of her work being conducted in Düsseldorf from 1908 until about 1940. Her primary interest was music and theater criticism. She was a well-trained musician: in addition to her journalistic work, RÜling apparently moonlighted by giving private music lessons. Her career seems to have taken off in the twenties when she became a regular writer for the *Düsseldorfer Nachrichten* and the *Düsseldorfer Lokal-Zeitung*. By 1934 she had become a secretary for the Reichsverband deutscher Presse (National German Press Association). She did not join the Nazi Party, but (like many other Germans) she seems to have been willing to go along quietly with the new norms of the Third Reich. (In November 1933, she signed a letter requesting admission to the Reichsverband deutscher Schriftsteller [National Association of German Authors]: “With German greetings and Heil Hitler, Theo Anna Sprüngli.”⁹⁹) After the war she moved to Delmenhorst, a small town near

Eriksson (New York: Routledge, 1997), 143–50. All English-language quotations from “Welches Interesse” come from this translation, unless otherwise noted.

⁹⁷ Leidinger’s research on RÜling was first published in German in “Theo A[nna] Sprüngli (1880–1953) alias Anna Rühling/Th. RÜling/Th. A. RÜling—erste biographische Mosaiksteine zu einer zwiespältigen Ahnin lesbischer Herstory,” *Mitteilungen der Magnus Hirschfeld Gesellschaft* 35/36 (2003): 28–39. The following year, Leidinger expanded the article and published it in English (see note 96, above). That article is the source of all biographical details on RÜling/Sprüngli in this paragraph and afterward.

⁹⁸ Deine Kollegen, “Der Tod entwand ihr die Feder,” *Delmenhorster Zeitung*, 9 May 1953, quoted in Leidinger, “Anna RÜling,” 483–84.

⁹⁹ Quoted in *ibid.*, 491. The letter is held in the Bundesarchiv Berlin.

Bremen, where she continued to write articles for local and regional newspapers. When she died of a heart attack in 1953, her colleagues at the *Delmenhorster Zeitung* ran an obituary with the headline “Germany’s Oldest Female Journalist [*Journalistin*] Is No More.”¹⁰⁰

Sprüngli/Rüling’s politics appear to have been somewhat left-of-center in her early days. In 1904 she published two articles in the anarchist journal *Der Kampf*, and she was at one point a chair of Hirschfeld’s Scientific-Humanitarian Committee, which generally endorsed socialist and social democratic politics.¹⁰¹ However, she seems to have become more conservative after her early twenties. During her middle and later years Rüling contributed to and participated in a number of women’s organizations, most of them at least somewhat politically conservative and associated with nationalist policies and militarism. Rüling’s political nationalism reached a new height during the First World War (and does not seem to have disappeared afterward), but Leidinger points out that her 1904 speech before the SHC was already marked by a “patriotic, nationalist vocabulary.”¹⁰² Although Rüling claimed in that speech that “Someday victory will be won under the banner of radicalism,” she also argued that respecting homosexual rights would

¹⁰⁰ Quoted in *ibid.*, 492; translation altered slightly.

¹⁰¹ Leng, *Sexual Politics*, 134. Rüling’s articles in *Der Kampf*, which she published as Theo Sprüngli, are: “Dirne,” *Der Kampf* 8 (March 26, 1904): 228–30; and “Gertrud Eysoldt,” *Der Kampf* 11 (April 21, 1904): 285–86. *Der Kampf* was a journal published by Senna Hoy (alias of Johannes Holzmann), who had collaborated with the idiosyncratic anarchist Adolf Brand. Today, Brand is mostly known for his stewardship of the journal *Der Eigene*, often regarded as the first homosexual journal, as well as the associated society *Gemeinschaft der Eigenen*. *Der Kampf* was financed by Benedict Friedlaender, a sexologist and homosexual rights advocate. (Leidinger, “Anna Rüling,” 485–486n36.) Both Friedlaender and Brand were occasional allies of Magnus Hirschfeld and the Scientific-Humanitarian Committee; however, they often found themselves at odds with the SHC because they preferred a more masculinist and nationalist interpretation of homosexuality than that favored by Hirschfeld. Given Rüling’s own apparent preference for nationalist and patriotic homosexual politics, it may be the case that Rüling came into Hirschfeld’s circle by way of Friedlaender or Brand. For more on Brand, Friedlaender, and Hirschfeld, see chapter 4 of this dissertation.

¹⁰² Leidinger, “Anna Rüling,” 490.

mean an increase in the health of the nation's people, thereby supporting "the well-being and greatness of our fatherland."¹⁰³ Rüling wrote almost nothing on the subject of homosexuality after 1904; so far as I know, her only other significant work to touch upon homosexual issues was a short story collection published in 1906.¹⁰⁴ When combined with her conservative feminism, this subsequent silence on the subject of homosexuality has led Leidinger to (sadly) declare Rüling "a problematic foremother of lesbian herstory."¹⁰⁵

¹⁰³ Rüling, "What Interest," 148; 149. It should be noted that it is problematic to assume nationalist attitudes to always be indicative of political conservatism. Given Rüling's later associations, the assumption is justified in this case; but such language was common in late-nineteenth- and early-twentieth-century Germany for those of a variety of political beliefs. See Geoff Eley, *Reshaping the German Right: Radical Nationalism and Political Change after Bismarck* (Ann Arbor: University of Michigan Press, 1991); Rogers Brubaker, *Citizenship and Nationhood in France and Germany* (Cambridge, MA: Harvard University Press, 1992); and Alon Confino, *The Nation as a Local Metaphor: Württemberg, Imperial Germany, and National Memory, 1871–1918* (Chapel Hill: University of North Carolina Press, 1997).

¹⁰⁴ Th. [Anna] Rüling, *Welcher unter Euch ohne Sunde ist... Bücher von der Schattenseite* (Leipzig: Max Spohr, 1906). Unfortunately, I have not yet been able to examine this collection myself. In addition, she also published a short 1919 newspaper story covering Hirschfeld's Institute for Sexual Science, which was, Leidinger believes, the last piece of writing from Rüling/Sprüngli to even mention homosexuality. Theo Sprüngli, "Wissenschaft. Institut für Sexualwissenschaft," *Neue Deutsche Frauenzeitung* 21 (October 2, 1919).

¹⁰⁵ Leidinger, "Anna Rüling," 498.



Figure 1.2: Theo Anna Sprüngli / Anna Rüling (1880–1953), c. 1910¹⁰⁶

Her later conservatism and silence about homosexuality notwithstanding, Rüling’s 1904 speech remained a touchstone (both positive and negative) for lesbian politics in Germany and in Europe for years. For example, Magnus Hirschfeld mentioned Rüling positively in *The Homosexuality of Men and Women* (1914). He referred to her as “one of the best experts on female homosexuality,” citing her 1904 speech as evidence.¹⁰⁷ Rüling also appears in Simone de Beauvoir’s *The Second Sex* (1949), where Beauvoir cites Rüling as an authority on the rates of

¹⁰⁶ This image is printed in *ibid.*, 484. The original photo is held in the Frauen-Kultur-Archiv, Düsseldorf.

¹⁰⁷ Magnus Hirschfeld, *Die Homosexualität des Mannes und des Weibes*, 1st ed. (Berlin: Louis Marcus Verlagsbuchhandlung, 1914), 497; “eine der besten Kennerinnen der weiblichen Homosexualität.” This reference is maintained in the 2nd edition of 1920.

homosexuality among prostitutes in *fin-de-siècle* Berlin.¹⁰⁸ On the negative side, as late as 1926 the noted German feminist Helene Lange accused Rüling of encouraging the (in her view, distasteful) myth that all feminists are lesbians.¹⁰⁹ In recent years, the speech has again attracted scholarly attention, although now mostly as a historical document.¹¹⁰ As the first known public proclamation of a female homosexual self-identity—and one that was, moreover, delivered to an association with the dual purpose of supporting both academic research into sexual inversion and

¹⁰⁸ Simone de Beauvoir, *The Second Sex*, trans. Constance Borde and Sheila Malovany-Chevalier (1949; New York: Vintage, 2011), 607. My attention was drawn to Beauvoir's citation of Rüling thanks to Leng, *Sexual Politics*, 151.

¹⁰⁹ See Leidinger, "Anna Rüling," 494. Lange's reading of Rüling, though homophobic, is not particularly inaccurate (cp. note 128, below). The view that most feminists were lesbians (as well as the related view that feminism encouraged the proliferation of lesbianism) was not uncommon in Germany and Austria among male sexologists. Characteristic examples can be found in the work of Albert Moll (*Handbuch der Sexualwissenschaft*) and Iwan Bloch (*Das Sexualeben unsere Zeit*), and also in that of feminist-allied male sexologists such as Hirschfeld (*Homosexualität*). (In Hirschfeld's case, the theory was not intended to disparage feminists; in the first two cases, it very much was.) For a brief overview, see Leng, *Sexual Politics*, 120–29, and 150–51; as well as Claudia Breger, "Feminine Masculinities: Scientific and Literary Representations of 'Female Inversion' at the Turn of the Twentieth Century," *Journal of the History of Sexuality* 14, no. 1/2 (2005): 76–106, at 101; see also note 128, below. The idea that feminists are lesbians can also be found by extrapolation in Weininger's theory in *Sex and Character*. Although he does not quite say so himself, his system would require that any woman with enough M to desire emancipation would also desire other women sexually. (See *Sex and Character*, part 1, chapter 6.)

¹¹⁰ Although there has been much commentary upon Rüling's speech in German-language journals and books (see Leidinger, "Anna Rüling," 478n4 for an extensive list), until recently she has not attracted much interest in English-language publications. For example, she is not mentioned at all in Richard Evans's classic study *The Feminist Movement in Germany, 1894–1933* (Beverly Hills: SAGE Publications, 1976). Besides Leidinger's work, see Breger, "Feminine Masculinities"; Heike Bauer, "Theorizing Female Inversion: Sexology, Discipline, and Gender at the Fin de Siècle," *Journal of the History of Sexuality* 18, no. 1 (January 2009): 84–102; Kirsten Leng, "Anna Rüling, Michel Foucault, and the 'Tactical Polyvalence' of the Female Homosexual," in *After The History of Sexuality: German Genealogies with and beyond Foucault*, ed. Scott Spector, Helmut Puff, and Dagmar Herzog (New York: Berghahn Books, 2012), 95–108; Kirsten Leng, "Permutations of the Third Sex: Sexology, Subjectivity, and Antimaternalist Feminism at the Turn of the Twentieth Century," *Signs* 40, no. 1 (2014): 227–54; Clayton J. Whisnant, *Queer Identities and Politics in Germany: A History, 1880–1945* (Columbia University Press, 2016); and Leng, *Sexual Politics*.

political activism for homosexual rights—Rüling’s speech is a crucial source of information about female homosexual self-understanding at the turn of the century, one of the few extant sources not filtered through the authorship of a male researcher.

Anna Rüling’s Theory of (Homo)Sexual Intermediacy

The basic thesis of Rüling’s speech is that the women’s movement and the homosexual movement ought to be natural allies in the fight for individual liberty. Rüling was frustrated by the refusal of many organizations within the women’s movement to agitate for issues that concern *Urninde*—Rüling’s preferred term for people like herself.¹¹¹ As her use of that term (coined by the mid-nineteenth century homosexual activist Karl Heinrich Ulrichs) indicates, Rüling’s understanding of homosexuality was rooted in the ‘third sex’ model common to Germany and Austria in the early twentieth century.¹¹²

While much of the commentary on Rüling’s speech places it into context with the sexological thought of the time, few scholars have paid much attention to the specific theory of biological sex that Rüling advanced.¹¹³ Some acknowledge Rüling’s view that the “female homosexual constitutes a distinct sex,” but this is typically noted in passing, or interpreted in the light of what it meant for Rüling’s understanding of sexuality or gender.¹¹⁴ I argue that ignoring Rüling’s thoughts about biological sex—or subsuming them under the category of gender or

¹¹¹ The Faderman and Eriksson’s translation of “Welches Interesse” renders *Urninde* as ‘Uranian’ or ‘female Uranian.’ Although this is a standard translation practice, I believe that it inappropriately masks the gendering of Rüling’s preferred word for herself. In future quotations from “What Interest?” I will silently alter the translation to instead maintain the word ‘Urninde.’

¹¹² On Ulrichs, and the idea of the ‘third sex,’ see note 62, above.

¹¹³ Cf. Bauer, “Theorizing Female Inversion”; and Leng, *Sexual Politics*.

¹¹⁴ Leng, *Sexual Politics*, 135.

sexuality—can lead to a misinterpretation of her argument.¹¹⁵ Perhaps it is for this reason that, as far as I know (with the possible exception of Claudia Breger), no one has yet pointed out the remarkable similarity between RÜling’s theory of sex and Weininger’s.¹¹⁶ Indeed, typically commentators hold that RÜling and Weininger stand in tension with each other. For example, Leidinger uses a point of opposition between the two to establish RÜling’s feminist *bona fides*. “Completely the feminist,” she writes, RÜling “explicitly protested against Otto Weininger’s claim that only homosexual women [rather than all women] were capable of emancipation.”¹¹⁷ The assumption here is that, as a good feminist, RÜling surely stood for everything that Weininger did not, particularly with regard to sex.

In fact, RÜling and Weininger agreed on quite a lot—within the realm of scientific interpretation, if not of politics.¹¹⁸ RÜling boldly opened her speech with a pair of claims: first, that “The women’s movement is necessary to the history of civilization [*kulturgeschichtliche*

¹¹⁵ Cf. Claudia Breger’s somewhat similar argument that gender and sexuality ought not to be collapsed into each other in discussions of the concept of sexual inversion. Breger, “Feminine Masculinities” See also note 125, below.

¹¹⁶ *Ibid.*, 100–101. Breger’s focus, however, is on the masculinist emphasis in RÜling’s theory of homosexuality.

¹¹⁷ Leidinger, “Anna RÜling,” 480. Curiously, Weininger does not appear anywhere else in Leidinger’s article; if one were not already familiar with him, his inclusion here would surely provoke confusion. That Leidinger (apparently) felt comfortable establishing RÜling’s feminist *bona fides* with her apparent intellectual opposition to Weininger speaks volumes about Weininger’s longstanding (and well-deserved) reputation as a symbol of everything misogynistic and sexist about early twentieth-century Austrian and German culture.

¹¹⁸ Even during her later, more conservative years, it is difficult to imagine RÜling finding anything to agree with in Weininger’s politics. RÜling’s conservatism mostly centered on nationalism, militarism, and colonialism; Weininger, while certainly conservative in most cultural senses, was not much of a nationalist (even within the particular sense of *fin-de-siècle* Austria-Hungary), despite his later appropriation by the Nazis. If anything, Weininger’s extreme (yet idiomatic) interpretation of Kant’s moral philosophy would probably preclude the possibility of military expansion. See also Jacques Le Rider, who argues that Weininger’s decision to convert to Protestantism (rather than Catholicism) indicates his allegiance to “the spiritual nation of Kant”—i.e., to Germany, rather than Austria-Hungary. Le Rider, *Der Fall Otto Weininger*, 38.

Notwendigkeit]” and second, that “Homosexuality is necessary in natural history [*naturngeschichtliche Notwendigkeit*], representing the connecting bridge, the natural and obvious link between men and women.”¹¹⁹ As she saw it, homosexuality is “an established scientific fact,” which cannot be overcome by “ignorance and intolerance.”¹²⁰ Here already Rülting adopted a similar position to Weininger with respect to the definition of sex. If homosexuality is a bridge between the sexes, then this implies that homosexuals occupy some sort of biologically intermediate space between men and women. Rülting confirmed this implication later in her speech, claiming that “never-erring Nature” had created “man, woman, and the transitions between the two.”¹²¹

Like her Austrian counterpart, Rülting found it useful to work within the associational universe of science, despite not being a scientist herself. While Rülting’s theory of sex contains no reference to arrhenoplasm and thelyplasm—or to any other specific biological structure in which masculinity and femininity would inhere—she shared Weininger’s view that there are a vast number of different biological sexes, which can be arranged on a spectrum according to varying levels of masculinity and femininity. She told her audience that there are “immensely diverse gradations in the transition between the sexes,” and followed this up later by lambasting “opponents of the women’s movement” who “lump[] all women [*Frauen*] together under the rubric ‘the female [*das Weib*],’ failing to note that there are no two completely identical beings.”¹²² Instead, one must take account of “the combined masculine and feminine qualities

¹¹⁹ Rülting, “What Interest,” 143; translation altered.

¹²⁰ Rülting, “Welches Interesse,” 131; “für die Wissenschaft eine feststehende Tatsache.”

¹²¹ Rülting, “What Interest,” 146.

¹²² *Ibid.*, 144; 147; translation altered slightly.

[*Eigenschaften*] a person possess.”¹²³ As with Weininger’s theory in *Sex and Character*, RÜling’s argument here allows for as many different biological sexes as there are people.

Like Weininger, RÜling articulated her theory of homosexuality within the context of a broader theory of sexual intermediacy. For her, homosexuals are generally people at the middle of the sexual spectrum. She argued that “The homosexual woman possesses many qualities, inclinations, and capacities which we ordinarily consider masculine. . . . she does not imitate man, she is inherently similar to him.”¹²⁴ She declared that for “people [*Menschen*] with primarily masculine characteristics,” the “physical love drive . . . naturally directs itself toward women and vice versa, without Nature always taking account of one’s external body.”¹²⁵ Because different people have different compositions of male and female characteristics, some homosexual women can still be influenced enough by their female qualities for their sex drive to be occasionally oriented toward men. In such cases, though, it is usually *feminine* men to whom the *Urninde* finds herself attracted. This, notably, is exactly the same prediction that Weininger’s law of sexual attraction makes. RÜling even referred to the same historical examples that Weininger used in *Sex and Character*, citing the love of the (female and pseudonymous) authors George Sand and Daniel Stern respectively for the (male but putatively effeminate) composers Frederick Chopin and Franz Liszt.¹²⁶

¹²³ *Ibid.*, 147.

¹²⁴ *Ibid.*, 144.

¹²⁵ *Ibid.*, 143–44; translation altered. The final clause of this sentence reads in German as “ohne daß die Natur immer auf den äußeren Körperbau des Menschen Rücksicht nimmt,” which is rendered in Faderman and Eriksson’s translation as “regardless of the actual physical sex of the person.” In fact, this is a fairly large distortion of RÜling’s meaning, and moreover it is a distortion that only makes sense in the context of an assumed binary of biological sex on the part of the translator, which is not at all present in RÜling’s speech.

¹²⁶ *Ibid.*, 144; cf. Weininger, *Sex and Character*, 59.

Given her view that homosexuals constitute an intermediary sex, it is unsurprising that RÜling expressed a belief in a bio-determinist model of homosexuality, wherein certain biological qualities cause ‘contrary sexual feeling.’ She followed Weininger in asserting that homosexuality is natural (the vocabulary of Nature permeates “What Interest”), and she regarded as ridiculous the idea that one’s sexuality can be altered: “experience proves that neither seduction nor anything else can transform a heterosexual into a homosexual or vice versa.”¹²⁷ She also gave credence to the view that homosexuality is linked to somatic characteristics of the ‘opposite’ sex. For example, she declared that a great number of the leaders of the feminist movement are Urninden, and that this will not surprise anyone “with the slightest bit of familiarity with homosexual traits... who knows any of [the movement’s] leading women personally *or by pictures*.”¹²⁸

RÜling’s views are consistent with a monist conception of biology that assumes a general correspondence between one’s biological sex and one’s gender expression and sexuality, with the former tending to determine the latter. In my terminology: RÜling’s theory of homosexuality generally assumes that biological sex possesses ontological priority over gender and sexuality. However, she also allowed for the possibility that sex, gender, and sexuality may not always

¹²⁷ RÜling, “What Interest,” 146. Nature language such as RÜling’s was not unusual among scientific advocates for same-sex legal reform in the late-nineteenth and early-twentieth centuries. It occurs with particular frequency in the work of Karl Heinrich Ulrichs. See Leck, *Vita Sexualis*, chapter 1. I discuss the use of such language in Hirschfeld’s work in chapter 4 of this dissertation.

¹²⁸ RÜling, “What Interest,” 148; my emphasis. For RÜling, this is not a negative statement; as she declares immediately afterward, such observers will “recognize that Urninden are often noble and fine.” Although RÜling recognizes that this observation could be used against the woman’s movement, she sees no reason to hide it anymore, as the movement has (in her estimation) advanced to the point where “no bureaucratic wisdom, no philistinism, can block its triumphant march” (148). Others in the movement did not always feel this way, however; cp. note 109, above.

align in the manner that she thought of as typical.¹²⁹ RÜling contended that both “absolute and merely psychological homosexuality” exist, although she qualified the latter category by asserting that it might be more accurately described as “unsexual” rather than as homosexual.¹³⁰ Although she held that most *Urninde* are both mentally and physically masculine, she acknowledged that “not all homosexual women show masculine exteriors that harmonize with their inner selves.” She observed that “There are many *Urninde* with completely feminine appearance, which they accentuate with very feminine behavior in order to escape being detected as homosexuals. This is a comedy that is bitter and painful to those who must participate.”¹³¹ But here the exception proves the rule: according to RÜling, such women are regarded as sad, unfortunate creatures, and she implies that they might prefer to have masculine bodies corresponding to their masculine souls. (Of course, this point also came mixed with a criticism of social norms that encourage such women to hide in the first place.)

Perhaps this is why, despite her gestures toward an infinite sexual spectrum, RÜling was generally content in practice to work within an assumption of three (or sometimes four) basic sexual types.¹³² When listing categories of people, RÜling tended to do so in threes. For example, she maintained that “Men, women, and homosexuals [*Homosexuellen*]” will “all benefit from a

¹²⁹ RÜling’s position on this point differs from Weininger’s, since he did not allow for any independence of sexuality or gender from sexual biology. (At least not in the first part of *Sex and Character*. In the second part, Weininger’s newfound rejection of positivism and embrace of dualism means that the mind must *always* be independent of the body—but this is complicated for women by Weininger’s assertion that absolute Woman *has* no mind.)

¹³⁰ RÜling, “What Interest,” 144.

¹³¹ *Ibid.*, 148, translation altered slightly.

¹³² RÜling usually spoke in terms of men, women, and homosexuals, but sometimes she divided the last category into male and female homosexuals.

more equitable upbringing and education.”¹³³ Elsewhere, she argued that her theory of sexual intermediacy can help human society move past the “ancient argument” as to which sex is superior:

I believe that with a little good will the dispute can be settled after examination of the intentions of never-erring Nature in creating man, woman, and the transitions between the two. One must conclude that it is wrong to value one sex more highly than the other—to speak first of a first-class sex—the male—a second-class sex—the female—and a third class sex—the uranian [*dem urnischen*]. The sexes are not of different value, they are merely of different kind. Because of this, it is clear that man, woman, and Uranian [*Urning*] are not equally suited for all professions.¹³⁴

Here RÜling moved quickly from an assertion of an infinite spectrum to a practical application of a trinary system. This may perhaps signal a divide in RÜling’s mind between the science of sexual differentiation, on the one hand, and social categorizations of those sexes, on the other. That is to say: it’s all well and good to assert that humans have infinite sexual variation from one individual to the next, but in terms of the way that humans generally *think*, we tend to need to create categories. This also means that while RÜling’s spectrum was less consistently infinite than Weininger’s, it was also less rooted in an original sexual binary (since it tended to reduce to three, rather than two, categories).

The greatest difference between RÜling and Weininger is that her theory of sex aimed to aid the cause of liberation, whereas his did not.¹³⁵ While RÜling’s understanding of sex, gender,

¹³³ RÜling, “What Interest,” 147.

¹³⁴ *Ibid.*, 146; translation altered slightly.

¹³⁵ In fact, Weininger *ostensibly* wrote *Sex and Character* with the goal of aiding the cause of women’s liberation. But in his theory this can only happen by liberating women from Woman, creating a “*pure human being*” out of “the ashes” of Woman. The process whereby this could happen is not described, and even admitting its technical possibility “seems like the affirmation of a miracle.” In other words, Weininger’s idea of ‘liberation’ is possible only as an abstract technicality, and even if ‘liberation’ were to occur, it would require the wholesale elimination of the oppressed class. Weininger, *Sex and Character*, 310; 313.

and sexuality was perhaps more essentialist than that which many women's, gay, and trans rights activists would prefer, she argued against a unisexual valorization that would hold any one sex to be superior. Indeed, despite all the similarities between RÜling and Weininger, the latter is explicitly invoked in "What Interest" only in denunciation. "There are those... like Weininger," RÜling said, who "maintain that all well-known, significant, or famous women in history, literature, science, or other fields were homosexual." RÜling argued that Weininger's assertion "cannot be substantiated, for not only history but our own observations daily prove its fallacy. ... Contrary to the belief of the anti-feminists that women are inferior and that only those with strong masculine characteristics are to be valued, I believe that women in general are equal to men."¹³⁶ To be sure, this was a conception of equality that still assumed significant sexual differences, even when considering non-physical characteristics. RÜling claimed that the various sexes have different strengths: she generally associated biological femininity with caring and emotionality, and biological masculinity with strength and logic, leading her to conclude that "homosexual women are especially suited for the sciences because they have those qualities lacking in feminine women: greater objectivity, energy, and perseverance."¹³⁷ Nevertheless, the primary aim of RÜling's theory was to encourage individual flourishing, free of sexual restrictions imposed by law or custom. She lauded the fight of the women's movement's "for the right of individuality and self-determination," and drew a comparison between "the Uranians [*die Uranier*]" who "have an innate, natural right to their love, which is noble and pure" and women who are "battling to win back the ancient human right which was taken from [them] by

¹³⁶ RÜling, "What Interest," 147–48.

¹³⁷ *Ibid.*, 147. This is another area in which RÜling displays some similarity to Weininger, as has also recently been noted by Leng, *Sexual Politics*, 138.

raw force.”¹³⁸ Rülíng’s approval of that battle for the sake of women, certainly, was something with which Weininger would never have agreed.

In Rülíng’s vision of the future, women and *Uranians* will stand side by side to fight for the rights that they have been denied, as “both movements will reach the point when they will recognize that they have many mutual interests.”¹³⁹ Rülíng believed that, because they are different sexes, (straight) women and homosexuals need different movements. But because of the biological sexual similarities between them, they can function as natural allies. In her most fervent dream, expressed boisterously and romantically at the end of her speech, Rülíng proclaimed: “Not today or tomorrow, but in the not too distant future, the women’s movement and Uranians [*Uranier*] will raise their flags of victory! *Per aspera ad astra* [*through adversity to the stars*]!”¹⁴⁰

Rosa Mayreder: The Synthetic Future

I turn finally to Rosa Mayreder (1858–1938), one of the most prominent figures in the Austrian women’s rights movement. Although Anglophone feminists have never paid much attention to Mayreder, in Austria she is typically regarded as one of the most important luminaries of the movement, in a manner perhaps comparable to the legacy of Susan B. Anthony in the US.¹⁴¹

¹³⁸ Rülíng, “What Interest,” 149; translation altered slightly.

¹³⁹ *Ibid.*, 150.

¹⁴⁰ *Ibid.*, 150

¹⁴¹ However, as Susanne Hochreiter notes, even in Austria, Mayreder was not regarded as a major feminist figure until the 1980s. Hochreiter, afterword to *Gender and Culture*, by Rosa Mayreder, trans. Pamela S. Saur (1923; Riverside, CA: Ariadne Press, 2009), 252. As with Rülíng, the quantity of scholarship on Mayreder seems to be increasing in recent years, although it is hardly massive. As far as I know, there is no Anglophone monograph on her, although she is usefully examined in comparative context in Harriet Anderson, *Utopian Feminism: Women’s Movements in fin-de-siècle Vienna* (New Haven: Yale University Press, 1992); Agatha Schwartz,

(Indeed, Mayreder's image even appeared on currency for a short time: from 1997 until 2002, when the Schilling was replaced by the Euro, the front of the Austrian 500-Schilling note featured a drawing of her; see fig. 1.4.) In addition to writing celebrated feminist essays, Mayreder successfully explored other artistic media, including painting, music, and literature.¹⁴² Perhaps her most famous artistic work (in her life as well as today) was the libretto for the opera *Der Corregidor* (premiered 1896). The score was composed by Hugo Wolf, with whom Mayreder apparently had a "deeply spiritual" friendship, prior to his syphilitic insanity.¹⁴³ She was also active on the organizational side of the feminist movement. Most notably, she was one of the founding members of the Allgemeine Österreicher Frauenverein (General Austrian Woman's Association), the central coordinating organization of the Austrian feminist movement.¹⁴⁴ During the First World War Mayreder became heavily involved with the international peace effort, particularly with the International Women's League for Peace and Freedom. In 1928, in recognition of her intellectual and artistic contributions to Vienna, she was named Ehrenbürgerin der Stadt Wien (Honored Citizen of Vienna), somewhat equivalent in an

Shifting Voices: Feminist Thought and Women's Writing in Fin-de-siècle Austria and Hungary (Montreal: McGill-Queen's University Press, 2008); and Leng, *Sexual Politics*. See also Ralph Leck, "Anti-Essentialist Feminism Versus Misogynist Sexology in *Fin de siècle* Vienna," *Modern Intellectual History* 9, no. 01 (2012): 33–60; like me, Leck compares Mayreder's thought with that of Weininger, but his conclusion differs from mine. Even in German, the only major work on Mayreder that I know of from recent years is Hilde Schmölzer, *Rosa Mayreder: Ein Leben zwischen Utopie und Wirklichkeit* (Wien: Promedia, 2002).

¹⁴² According to an article from the *Schweizer Frauenblatt* (January 1, 1926), Mayreder first made a name for herself as a painter, before proceeding to poetry. "Rosa Mayreder," p. 2, B Rep. 235-DS MF-Nr. 3335, Landesarchiv Berlin, Germany.

¹⁴³ *Ibid.*, 2. The article hurriedly clarifies that Mayreder and Wolf never had an affair. (She did have affairs with other men, although the article does not mention it.)

¹⁴⁴ On the Allgemeine Österreicher Frauenverein, see Harriet Anderson's authoritative study in *Utopian Feminism*, part 1.

American context to being granted the key to the city.¹⁴⁵ Mayreder died at the age of eighty in 1938; she lived in Vienna to her final day.



Figure 1.3: Rosa Mayreder (1858–1938), c. 1905



Figure 1.4: Rosa Mayreder on the 1997–2002 Austrian 500-Schilling note

¹⁴⁵ Schwartz, *Shifting Voices*, 206. Unfortunately, the title was reduced to the less-prestigious “Bürgerin ehrenhalber der Stadt Wien” (Citizen of Honor of Vienna) after Mayreder spoke publically about her Jewish grandfather. See Marianne Baumgartner, *Der Verein der Schriftstellerinnen und Künstlerinnen in Wien (1885–1938)* (Vienna: Böhlau Verlag, 2015), 13n23.

Mayreder clearly made her mark in a plethora of fields, but it is for her feminist writings that she is best known today. The historian Harriet Anderson has hailed Mayreder as a “philosopher of feminism,” one of (in Anderson’s view) only three Austrian women writing around 1900 who were able to “create[] a coherent visionary feminist theory.”¹⁴⁶ Mayreder’s theory, like those of many other feminist intellectuals, aimed to examine the causes of the current state of sexual inequality and to discover the conditions of possibility for creating a better, more equitable world. But where many other feminists focused on the social forces holding women back, Mayreder’s analysis tended to privilege an individualist view that explored the biopsychological potentiality for greatness within any given person.¹⁴⁷ The cornerstone of Mayreder’s philosophy was the possibility of a new “synthetic human,” a sort of *Übermensch*—with the emphasis on *Mensch* (rather than *Mann* or *Frau*)—who could potentially evolve out of the sexism of the current age.¹⁴⁸ Just as “Nietzsche’s Zarathustra” came “to teach the superman,” so too did Mayreder proclaim the eventual coming of the synthetic human, who would be able,

¹⁴⁶ Anderson, *Utopian Feminism*, 145. The other two of Anderson’s Austrian “philosophers of feminism” were Irma von Troll-Borostyáni and Grete Meisel-Hess.

¹⁴⁷ This is not to say that Mayreder ignored the socio-cultural causes of sexual inequality. She was quite aware of such factors—but they were not the primary focus in most of her essays.

¹⁴⁸ Like many philosophers of the time, Mayreder was significantly influenced by Friedrich Nietzsche, and particularly by his *Thus Spoke Zarathustra* (1883–91) and *Beyond Good and Evil* (1886). However, she was also well aware of the deep misogyny in Nietzsche’s philosophy, and of the need to work around it. See, for example, Mayreder, *Survey*, 163; 225–26. Perhaps surprisingly, this is one of the areas in which Mayreder resembles Weininger, who deplored the “Asiatic” misogyny of Schopenhauer and Nietzsche. He instead called for a (supposedly) more benign sexism, based primarily on masculine respect for the tiny shred of humanity that he believed women possessed. Weininger, *Sex and Character*, 230; 308–9.

through a combination of masculine and feminine attributes and perspectives, to escape the restrictions placed upon one by biological sex.¹⁴⁹

As I argue in this section, Mayreder's feminist theory was predicated upon a spectral understanding of biological sex, one that allowed for a potentially infinite number of sexual configurations. This can be seen in particular in her idea of the above-noted synthetic human, which she explored in several chapters in her first collection of essays, *A Survey of the Woman Problem (Zur Kritik der Weiblichkeit; 1905)*.¹⁵⁰ Like Weininger and Rüling, Mayreder considered biological sex to be an expansive category that embraces a wide variety of phenomena. For her, sex includes not only gonads and genitalia, but also psychological perspectives, as well as the strengths and weaknesses of a given body for given activities. Mayreder understood the body in a biologically monist way that interpreted consciousness as being a result of physiological processes, and this meant that, for her, there was sometimes little distinction between (what we would call) sex and gender. At the same time, her synthetic humans have the advantage of greater individual freedom, because they have evolved beyond

¹⁴⁹ Mayreder, *Survey*, 243. Cf. Friedrich Nietzsche, *Thus Spoke Zarathustra*, pt. I, §3. Note that Mayreder speaks of synthetic people both in present tense and in future tense: currently existing synthetic people are few in number but represent the future of the human race. As Anderson notes, "the synthetic person Mayreder envisages... is already a reality even if an exception. ... The female synthetic person is the herald of the new woman who transcends the norms of average femininity without adopting the negative aspects of masculinity." *Utopian Feminism*, 167.

¹⁵⁰ Rosa Mayreder, *Zur Kritik der Weiblichkeit: Essays* (1905; Jena: Eugen Diederichs, 1922). Some scholars prefer to translate the title as *A Critique of Femininity*; but I choose to render it according to the title of the published English translation, which will be the source of all English-language quotations, unless otherwise indicated: Rosa Mayreder, *A Survey of the Woman Problem*, trans. Hermann Scheffauer (New York: George H. Doran, 1913). NB: Scheffauer's translation, although generally adequate, tends to translate 'der Mensch' as 'man.' Although typical for 1913, such a translation masks the sexual neutrality of 'der Mensch' in German, which is particularly important when examining feminist philosophy. In future quotations I will silently alter the translation to render the term as 'human' or 'person.'

what she refers to as “the teleological limitations of sex”—that is, those bio-psychological traits that are aimed only toward reproduction of the species.¹⁵¹ As the historian Kirsten Leng recently observed, “The synthetic human being had the capacity to overcome the barriers of binary sexuality and could help ameliorate the relationship between the sexes, much in the way Edward Carpenter hypothesized the role of the intermediate sex.”¹⁵²

Mayreder spent a significant amount of time at the beginning of *Survey* exploring the notion of biological sex. Before the future human could be prophesied, the state of current knowledge about humans (and especially about *women*) needed to be understood. Only afterward could that knowledge be corrected—or discarded. As Mayreder put it almost twenty years later: “A *Survey of the Woman Problem* begins with the question of what woman *is*, defined according to her ‘nature,’ and it shows that this question, posed in this general way, cannot be answered at all.”¹⁵³ The opening chapter of *Survey* (“Outlines” in the English translation; “Grundzüge” in the German) charts the existing literature on the nature of sex—and of the female sex in particular. Here Mayreder evaluates a remarkable breadth of material, and, like Weininger, she quickly demonstrates that she possessed great familiarity with recent scientific developments, as well as with diverse cultural and philosophical outlooks on the nature of sex. In the first six pages alone Mayreder cites the work of Cesare Lombroso, George Egerton, Rudolf Virchow, Havelock Ellis, Jean-Paul Möbius, Theodor Gottlieb von Hippel, Heinrich Heine, Johann Jakob Bachofen,

¹⁵¹ The term “teleological limitation of sex” (*teleologische Geschlechtsdifferenzierung*) first appears at Mayreder, *Survey*, 26, and it reappears frequently (sometimes with slightly different wording) throughout the book.

¹⁵² Leng, *Sexual Politics*, 147. See Edward Carpenter, *Love’s Coming of Age; a Series of Papers on the Relations of the Sexes* (1896; New York: Kennerley, 1911); and Edward Carpenter, *The Intermediate Sex: A Study of Some Transitional Types of Men and Women* (1908; New York: Kennerley, 1912).

¹⁵³ Mayreder, *Gender and Culture*, 2.

William Lecky, Eduard von Hartmann, Arthur Schopenhauer, Julius Duboc, the Goncourt brothers, Charles Kingsley, Alexander Pope, Hermann Lotze, Friedrich Nietzsche, Richard von Krafft-Ebing, Laura Marholm, Johann Wolfgang von Goethe, Paolo Mantegazza, Paul Broca, Michel de Montaigne, Franz Grillparzer, and Jonathan Swift.¹⁵⁴ Suffice it to say that if Mayreder felt the need to convince the reader of her scientific and cultural erudition, she succeeds quite effectively.

Her flurry of citations serves both to present and to pillory the received wisdom on the ‘nature’ of women. By juxtaposing, for example, Virchow’s statement that gentleness is an “adjunct of the ovary” with Ellis’s opinion that nervous irritability is a feminine trait—and then repeating this exercise more than a dozen times—Mayreder strives to demonstrate that all these “paradoxical expressions and contrary opinions” are “one and all merely the result of subjective tastes and conventional prejudices.”¹⁵⁵ Or, as an American reviewer of *Survey* put it in 1913, “Frau Mayreder is justified in thinking that writers on the subject are, to say the least, rather happy-go-lucky.”¹⁵⁶ This is a style of argumentation that Mayreder used throughout her *oeuvre*—as Susanne Hochreiter has noted, “The art of [Mayreder’s] writing is to summarize (often with irony) various theories and perspectives that represented the actual scholarly status quo in order to discuss and evaluate them before she presented and substantiated her own positions.”¹⁵⁷ In this case, however, Mayreder throws down the gauntlet even before weaving her web of juxtaposed references. Right at the start, she tells us that “The greatest confusion has been

¹⁵⁴ Mayreder, *Survey*, 2–6. In fact, Mayreder cites even more names in these pages than those I have listed, but I have not been able to precisely identify those I have left out.

¹⁵⁵ *Ibid.*, 7.

¹⁵⁶ F. M. Colby, “The Book of the Month,” *The North American Review* 198 (December 1913): 874–80, at 876.

¹⁵⁷ Susanne Hochreiter, afterword to *Gender and Culture*, by Mayreder, 254.

caused by the generalizing methods that it has been customary to adopt. Such terms as ‘the male’ and ‘the female’ are employed as if they express some actual metaphysical entity existing in and distinguishing every man from every woman.”¹⁵⁸ In other words—and contrary to what Mayreder regarded as popular belief—there are no absolute definitions of Man or of Woman, but only relative ones, better suited to describing individual people than broad sexual types. As she later clarified, “There is always a danger in recognizing conventional valuations, as has been lately revealed in the tendency to acknowledge a fundamental difference between the sexes.”¹⁵⁹

In her sexual schema, Mayreder contrasts the synthetic type of humanity with what she terms the *acratic* and the *iliastric* types.¹⁶⁰ *Acratic* people possess “unmixed, one-sidedly-developed sexuality [*Geschlechtswesen*].”¹⁶¹ By this, Mayreder means that they are unable to overcome the teleological limitations of their sex—their biological sexual tendency towards “licentious domineering masculinity and weak, insignificant or passive, or else crafty, false and ludicrous femininity.”¹⁶² *Iliastric* people occupy the opposite position; they “have overcome sex [*Geschlecht*]” to become “sexless [*ungeschlechtlich*].”¹⁶³ Mayreder writes that *iliastric* people

¹⁵⁸ Mayreder, *Survey*, 2; translation slightly altered. In this sentiment Mayreder finds herself diametrically opposed to the Weininger of the second part of *Sex and Character*—but rather in agreement with the Weininger of the first part.

¹⁵⁹ *Ibid.*, 8.

¹⁶⁰ Mayreder’s term *iliastric* derives from the sixteenth-century physician Paracelsus’s coinage *iliaster*, from Greek words *ἴλη* (matter) and *ἀστήρ* (star), which refers to a fusion of body and soul. See *Ibid.*, 247; on Paracelsus’s etymology, see C. G. Jung, “Paracelsus as a Spiritual Phenomenon,” in *Collected Works of C.G. Jung, Volume 13: Alchemical Studies*, by C. G. Jung, trans. Gerhard Adler and R. F. C. Hull (1942; Princeton: Princeton University Press, 1967), 109–90, at 125. Mayreder does not supply an etymology for *acratic*, but the term presumably derives from the Greek word *ἀκρασία*, meaning a lack of self-control (see Plato’s *Protagoras*).

¹⁶¹ Mayreder, *Kritik*, 283; “der *akratische* Mensch, das ungemischte, einseitig entwickelte Geschlechtswesen.”

¹⁶² Mayreder, *Survey*, 262.

¹⁶³ *Ibid.*, 262; 263.

tend to be esteemed in the priestly ideals of various religions (such as Catholicism, Hinduism, and Buddhism), and the “most perfect [*vollendester*] representatives” of the type “in Western culture are the Christian saints, in whose mental-moral appearance [*Erscheinung*] all sexual differentiation has been thoroughly eliminated.”¹⁶⁴ In her view, *iliastric* people typically value detachment, such that they can seem to be “citizens, one might say, of another world and strangers to this earth.”¹⁶⁵

In one sense, synthetic people occupy something of a middle ground between the extreme sexuality (in the sense of *Geschlechtlichkeit*, or ‘sexual character’) of the *acritic* type and the absent sexuality of the *iliastric* type. In Mayreder’s description, synthetic humans will be “The representatives of a higher humanity [*Menschentums*] in a monistic sense,” those whose “psychophysical constitution enables them to cross the barriers of the sexes, and to bring about an increase and a heightening in the internal relation of the sexes”; each will be “the human of commonality, the ‘human subjected to the conditions of masculinity and femininity.’”¹⁶⁶ She

¹⁶⁴ Ibid., 262; translation altered slightly.

¹⁶⁵ Ibid., 262.

¹⁶⁶ Mayreder, *Kritik*, 285; “Der Repräsentant eines höheren Menschentums im monistischen Sinne wird jener sein, mit dessen psychophysischer Konstitution die Möglichkeit gegeben ist, die Schranken des Geschlechtes zu überschreiten, und eine Steigerung und Erhöhung des innerlichen Verhältnisses zwischen den Geschlechtern herbeizuführen—der Mensch der Gemeinsamkeit, der ‘den Bedingungen des Männlichen und des Weiblichen unterworfenen Mensch,’ der *synthetische*.” Mayreder does not specify whom she (apparently) quotes at the end of the sentence.

Mayreder does not define her term “das innerliche Verhältnis,” and its translation is difficult. *Verhältnis* is normally used in the sense of ‘relation’ or ‘relationship,’ and in this sense Mayreder might simply mean that synthetic men and synthetic women will be able to get along better (including when having sex) than ‘average’ men and women can. However, the word can also be translated as ‘proportion’ or ‘ratio,’ and in this sense may indicate that synthetic people have different proportions of masculinity and femininity within them when compared to ‘average’ people. The language of “eine Steigerung und Erhöhung” suggests that synthetic people might be thought of as having higher proportions of *both* masculinity *and* femininity, but

continues: “The distinguishing mark of synthetic people is a seeing beyond the barriers of sex [*Geschlecht*], the ability to cast off the bindings brought about by sexuality [*Geschlechtlichkeit*], in order to enter, via the idea of humanity, into the realm of human commonality.”¹⁶⁷ Given the masculine-feminine hybridism of the synthetic “psychosexual constitution,” such people clearly differ from the *acratic* type, which is marked by “one-sidedness of sexual differentiation.”¹⁶⁸ Synthetic people also differ from the *iliastric* type in that they have not given over to complete sexlessness. They are distinguished instead by a “compound nature” that is sexual in a way that incorporates both masculine and feminine elements.¹⁶⁹ In short, if *iliastric* people are defined by being *neither male nor female*, synthetic people are defined by being, to a partial extent, *both male and female*.

In general, however, the synthetic person is significantly more similar to the *iliastric* person than to the *acratic*. In this respect, the synthetic type represents more of an improvement upon the *iliastric* type than a median between it and the *acratic*.¹⁷⁰ Mayreder is particularly critical of the *iliastric* tendency towards “an asceticism hostile to life,” which she later terms an “ascetic renunciation of sex [*Verneinung des Geschlechtes*].”¹⁷¹ As evidence, she cites the

this seems inconsistent with Mayreder’s description of *acratic* people as having the greatest quantity possible of their respective sexual attributes.

¹⁶⁷ Ibid., 288; “Was die Auszeichnung der synthetischen Menschen bildet, ist das Hinaussehen über die Schranken des Geschlechtes, die Fähigkeit, das Bindende, das die Geschlechtlichkeit mit sich bringt, abzustreifen, um in der Idee des Menschlichen das Gebiet der Gemeinsamkeit zu erreichen.”

¹⁶⁸ Mayreder, *Survey*, 265; translation altered slightly.

¹⁶⁹ Ibid., 270.

¹⁷⁰ One could also describe the synthetic human as a Hegelian *Aufhebung* of the *iliastric* type, with the *acratic* type serving in this respect as the thesis. On this point, see also Mayreder’s narrative of human history, examined below.

¹⁷¹ Mayreder, *Survey*, 263; 270. Here Mayreder seems to be following Nietzsche’s conception of ‘ascetic ideals’ in the third essay of *On the Genealogy of Morality*.

necessity “for a man seeking the higher life to abandon all the outward signs of sex” which in Catholicism expresses itself in the requirement “that priests shall wear female-designated clothing—the cassock reaching to the feet—as well as a beardless face.” Mayreder’s problem with this approach is that “The ascetic principle... cannot raise the higher person entirely above sex [*Geschlecht*], because he does not represent a preliminary stage for a metaphysical existence free from sexuality [*Geschlechtlichkeit*], but a perfecting of what is attainable to humanity in a form of life bound body and soul to the earth.”¹⁷² What is needed instead is a race of humans who *embrace* their sexual character, and this is the foundation of the superiority (in Mayreder’s view) of the synthetic type. For synthetic people, “sexuality [*Geschlechtlichkeit*] is the very condition that enables them to emerge from their own limited individual existence.”¹⁷³

The general similarity between the synthetic and the *iliastric* types can also be seen structurally: Mayreder frequently compares the synthetic type with the *acratic*, without mentioning the *iliastric*. That is to say, the structure of Mayreder’s writing implies that the synthetic–*acratic* contrast is of much greater importance than the *acratic*–*iliastric* and the synthetic–*iliastric* contrasts. In these comparisons, Mayreder typically opposes the “extreme sexual differentiation” of *acratic* people with the “compound nature” of synthetic people.¹⁷⁴ Genius, which in Mayreder’s system is exclusively possible for synthetic people (more on this below), is “an expansion [*Ausdehnung*] beyond the borders [*Grenzen*] of one-sided sexual differentiation, a synthesis of male and female nature.”¹⁷⁵ For the synthetic people of the future,

¹⁷² *Ibid.*, 263.

¹⁷³ *Ibid.*, 267; translation slightly altered.

¹⁷⁴ *Ibid.*, 266 (translation slightly altered); 270.

¹⁷⁵ *Ibid.*, 255–56; translation altered.

sexual differentiation—particularly in a psychological sense—will become a matter of insignificance, even if it will not disappear entirely.¹⁷⁶

Mayreder's conception of the synthetic human would thus seem to require a definition of biological sex that does not posit absolute distinctions between male and female. To realize the synthetic ideal, 'the sexes' must become more similar (without becoming identical), an idea that Mayreder typically expresses through spatial metaphors ("overstep the bounds of the sexes," "expansion beyond the borders," etc.). Such metaphors imply the absence of absolute sexual distinctions. In its purest form, a conception of absolute sexual difference does not allow for such metaphors to even be thinkable; if male and female are absolutely disjunctive, then the idea of 'space' or 'distance' between the sexes becomes meaningless. Put another way: any metaphor of distance between male and female already implies a sexual spectrum. The necessity of a spectral conception of sex can also be found in the language of biological quantification that Mayreder sometimes uses to describe sexuality (*Geschlechtlichkeit*). References to the "quantity, plus or minus, of masculinity or femininity [*Männlichkeit oder Weiblichkeit*]" imply that masculinity and femininity can be measured, and that becoming closer (so to speak) to the so-called opposite sex requires becoming quantifiably more like that sex.¹⁷⁷ As was also the case with Weininger and Ruling, Mayreder's idea that different people have different quantities of masculinity and femininity suggests the impossibility of an absolute sexual binary.

¹⁷⁶ Here again Mayreder displays an unexpected similarity with Weininger, who claimed in the conclusion to *Sex and Character* that "The Woman Question will persist as long as there are two sexes and will not fall silent until the question of humanity does. This is what Christ meant when... he told Salome... that death would hold sway as long as women brought forth and that the truth would not be seen before two were made into a single one, and male and female had become a third, which was the same, but *neither Man nor Woman*." Weininger, *Sex and Character*, 310–11.

¹⁷⁷ Mayreder, *Survey*, 264; translation altered slightly.

Mayreder's Swinging Sexual Spectrum

It is not a surprise, then, that Mayreder suggests that a spectral model of relative sexual difference would be superior to a binary model of absolute difference. These spectral suggestions—as will be seen—are somewhat inconsistent. However, I believe that when Mayreder's biological monism is taken into account, a spectral reading provides the best account of her understanding of sex.

We have already glimpsed a spectral conception of sex lurking behind Mayreder's distinction between synthetic, *acratic*, and *iliastric* people. But in *Survey* the spectral model comes through most strongly toward the end of the book, where Mayreder develops a pendulum metaphor to describe the phenomenon of sexual differentiation. "We may conceive" of this phenomenon, she writes, "as the result of a progressive movement that might be represented as the path described by the swinging of a pendulum." The pendulum has two extreme points, as well as a center, with "one-half of the path" representing "the domain of male sex-differentiation, and the other... the female." Mayreder emphasizes that "Each point in its arc of oscillation has a corresponding point on the other side of the median line, and at an equal distance from it," such that "these symmetrically arranged points correspond to one another." This means that, in addition to the lateral bisection of the arc (representing the traditional sex binary), one could also divide the points into "inner or outer" groups, "according to the degree of their distance from the middle point."¹⁷⁸ Those in the outer groups, at the extreme ends of sexual differentiation, are the *acratic* people, while those in the inner group are the synthetic people. (The *iliastric* people are those in the exact center.) As she emphasizes, "In this illustration it is plainly seen why... the groups near the middle are so far removed from those of their own sex at the very end points that

¹⁷⁸ Ibid., 268–69; translation altered slightly.

the similarity of their physiological nature [*Physis*] affords no bond of fellowship or of comprehension between them.”¹⁷⁹

In this metaphor, Mayreder presents a vision of a sexual spectrum that agrees in its most fundamental aspects with the spectra advocated by Weininger and Riling. Her metaphor even includes an explanation for sexual attraction (namely, that people find themselves attracted to persons occupying the corresponding ‘point’ on the other side of the arc) that is essentially identical with (if less mathematical than) the one presented in *Sex and Character*. This is a theory that, in its description of “innumerable points of a corresponding equilibrium,” admits of an infinite variety of biological sexual configurations. As Mayreder writes, the problem of sexual differentiation becomes much easier when we stop “look[ing] upon the terms ‘man’ and ‘woman’ as absolutely binding definitions” indicating precise and narrowly-defined types.¹⁸⁰

However, Mayreder is not consistent in asserting that biological sex is best understood in spectral terms. Like Darwin, Weismann—and Weininger—she finds some evidence for biological bisexuality (in the sense of possessing both male and female qualities) in the mechanics of inheritance. “The fact of crossed transmission”—that is, of transmission of genetic material from father to daughter and mother to son—“already makes it evident that the single individual [*das einzelne Individuum*] unites in him- or herself [*in sich*] masculine and feminine qualities [*Eigenschaften*], and cannot, even in the lowest degree of development, be considered as a ‘homologous sexual being [*Sexualwesen*].’ ” Mayreder notes that “One might, indeed, found on this a conception that each individual [*Individuum*] presents a mixture, that absolute masculinity and femininity never occur. By the adoption of a principal of sex gradation

¹⁷⁹ Ibid., 269.

¹⁸⁰ Ibid., 269; translation slightly altered.

individual deviations from the general type could then be explained.”¹⁸¹ This last statement, however, is written in the subjunctive mode, and Mayreder immediately follows it with a criticism of sexual gradation as not offering “a good starting point” for discerning “the real meaning of what is masculine and what is feminine.”¹⁸²

Toward the end of the book, Mayreder again returns to the subject of intermediary biological sex. Here she dismisses the thought that this notion can legitimately serve as the foundation for our understanding of sex. I will quote the relevant passage at length, since it might be seen at first glance as disconfirming my interpretation of Mayreder. After presenting the views of several authors who promote one form or another of sexual hybridity, Mayreder offers the following clarification:

It would be a great mistake to regard the views expressed in these passages... as merely a symptom of a pathological variation from normal sexuality [*Geschlechtlichkeit*]. ... Those [authors] I have quoted refer exclusively to mental conditions described either literally or else symbolically. There is no allusion to any latent bodily bisexuality. No one can doubt that physiologically the course of evolution toward “homologous monosexuality,” towards definite sexual differentiation in the individual, constitutes the most desirable tendency. Every deviation from the physiological norm renders the individual an imperfect being; bodily hermaphroditism [*Zwitterhaftigkeit*] is repulsive because it indicates incompleteness, a defective and faulty formation [*Bildung*]. To be a whole man or a whole woman according to the body has just as much to do with the qualities of a beautiful and healthy person as it does with an intact corporality [*intakte Korporisation*] in every other respect.¹⁸³

Here, it would appear that Mayreder dismisses the possibility of a biological sexual spectrum—or, at least, dismisses it as the possible building stone for a future race of superior, synthetic

¹⁸¹ *Ibid.*, 20. See also note 42, above.

¹⁸² *Ibid.*, 20. Mayreder’s primary piece of evidence for this assertion, naturally, is the theory of Otto Weininger, whom she proceeds to critique for the next several pages. However, as I will argue below, I view Mayreder’s disagreement with Weininger as stemming primarily from her intellectual similarity to him, rather than a dissimilarity.

¹⁸³ *Ibid.*, 257–58; translation altered.

humans. But already in the next sentence she seems to once again affirm that sexual intermediacy is normal and expected:

It must not, however, be forgotten that both sexes have been developed from an originally hermaphroditic organism [*hermaphroditischen Urform*], and such traces must not have completely disappeared in later differentiation. And according to the latest biological theories, it seems moreover probable that characteristics [*Merkmale*] of both sexes will remain united in all the more highly organized beings.¹⁸⁴

What should we make of this seemingly contradictory passage, especially in the light of other places in *Survey* where Mayreder lambasts those who think in terms of an absolute dichotomy between male and female? My suspicion is that Mayreder speaks here not of biological sexual intermediacy in every respect, but only in the limited sense of gonadal or genital hermaphroditism.¹⁸⁵ She twice references the idea of hermaphroditism in this passage (albeit using different German words: *Zwitterhaftigkeit* and *hermaphroditischen*). At this time, term ‘hermaphrodite’ referred (in scientific terminology) specifically to those who possessed both male and female gonads.¹⁸⁶ This language, together with her claims that such people possess a faulty “formation” (*Bildung*) and lack “intact corporality” (*intakte Korporisation*), seems to me to imply that she is mostly thinking in terms of physical organs, rather than hormones or other aspects of sexual biology.¹⁸⁷ Particularly in the light of her argument that

¹⁸⁴ *Ibid.*, 258; translation altered.

¹⁸⁵ On conceptions of hermaphroditism in the late-nineteenth and early-twentieth centuries, see note 48, above.

¹⁸⁶ To be sure, the term was also used at this time in a number of significantly broader senses. But since Mayreder was so well-versed in the scientific literature, she must have been at least aware of the more technical meaning of ‘hermaphrodite.’

¹⁸⁷ With respect to sexual hormones, Mayreder was at least somewhat aware of the nascent science of endocrinology: *Survey* contains a reference (in the context of an evaluation of Weininger) to “an inner secretion of the germinal-glands” (22). However, in 1905 all endocrinological theories of sex remained mostly theoretical. It was not until Eugen Steinach’s experiments of the 1910s that the existence of sexual hormones could be considered scientifically proven. (Steinach, incidentally, does show up briefly in Mayreder’s second volume

humans have evolved from hermaphroditic organisms, and that sexual characteristics “remain united in all the more highly organized beings,” it seems to me that the best interpretation of this passage is that Mayreder considers gonadal (or ‘true’) hermaphroditism to be an aberration, but that in other respects she is far more willing to allow (and consider good) the prospect of biological sexual intermediacy or hybridity.

Another possible interpretation of this passage is that Mayreder is only interested in sexual hybridity at the psychological or intellectual level; when considered at the level of the body, however, she finds such a concept disgusting. There is some justification for this reading in other places in *Survey*. For example, in the pendulum metaphor noted above, Mayreder describes a synthetic woman as being very close to a synthetic man in terms of “psychosexual phenomena,” but also as sharing more similarity with an *acratic* woman in terms of “physiological nature [*Physis*].”¹⁸⁸ In other words, similarity of the mind may not be the same thing as similarity of the body. Along these lines, Leng has argued that Mayreder “maintained that the mind was not sexually differentiated to the same degree as the body, since the intellect, unlike the body, did not serve evolutionary—that is, reproductive—purposes through sex.”¹⁸⁹

However, this second interpretation is inconsistent with Mayreder’s biological monism. For Mayreder, there is ultimately no distinction between the body and the soul. Immediately after the passage considered above, she notes that “it is an advantage that modern thought, regarding all problems by the light of natural science... has considered mental phenomena as processes of

of essays, published in 1923. *Gender and Culture*, 70.) For more on Steinach and endocrinology, see chapters 2 & 3 of this dissertation.

¹⁸⁸ Mayreder, *Survey*, 269.

¹⁸⁹ Leng, *Sexual Politics*, 148.

nature.”¹⁹⁰ Later, she rejects “The conception formed by those who hold dualistic views of human existence, that sex is an attribute only of the body.” Instead, Mayreder proposes that “The strange delusion that bodies are inhabited by a higher being, an immortal and sexless soul [*Seele*]” is probably only “a conscious reflection of a physical process.” She also claims that “the illusion of free will... is... incompatible with the results obtained by a study of the human understanding.”¹⁹¹ In other words, Mayreder regarded the mind and the intellect as part of the body, not separate from it. In such a biologically monist system, any psychological closeness between men and women must necessarily originate in the body. This suggests that *psychological* sexual intermediacy without *biological* sexual intermediacy would be impossible.

For most of human history, Mayreder argues, men have predominated over women because both have been constrained by the “teleological differentiation of sex.” In earlier times, the “teleological weakness of woman and the teleological strength of man” could not be circumvented.¹⁹² However, as human biology and human civilization have evolved, the possibility—both biological and social—of individuality [*Individualität*] has increased. “[T]he most masculine man is the savage,” Mayreder writes, and it is “Only when a modification has taken place in the basic instincts of his sexual nature” that males become “capable of civilization.” In the process of building society, man “takes over part of woman’s work, man sacrifices something of the fullness of his masculinity. ... Civilization and culture bring man nearer to woman; they feminize [*verweiblichen*] him; they are anti-virile [*antiviral*].”¹⁹³ So far, so degenerative. But Mayreder turns the standard *fin-de-siècle* narrative of masculine

¹⁹⁰ Mayreder, *Survey*, 258.

¹⁹¹ *Ibid.*, 271.

¹⁹² *Ibid.*, 26.

¹⁹³ *Ibid.*, 93.

degeneration on its head; she argues that this process of civilizational feminization of men is a bio-psychological evolution that is necessary for the development of higher mental faculties.¹⁹⁴ “Retrospectively,” the history of human biological sex “appears as a fierce evolutionary struggle of humanity to surmount the teleological barriers of sex in order to obtain faculties for reaching a higher mental plane.”¹⁹⁵

This means that modern humans (and, particularly, modern women) are less bound by the teleological characteristics of their sex than at any previous point in human history. Through evolutionary adaptation to civilization, individuality and higher intelligence have become bio-psychologically possible. The geniuses of society—both male and female—are not, contrary to what Weininger argued, *sui generis* artists who encompass the entirety of humanity within their mental bounds.¹⁹⁶ Rather, “such a person bears the signs and presages of a higher development, things which, from the evolutionary point of view, are of the greatest value;” or, to put it more directly, “genius betokens greater functional activity.”¹⁹⁷ This means that the greatest minds are those who are on the cutting edge of evolution—those who are, in a certain sense, *less* human (in the sense of being less *homo sapiens*) than the ‘average’ person.

In Mayreder’s argument, the possibility—and also the moral necessity—of woman’s emancipation derives from this biologically deterministic reading of the current state of human

¹⁹⁴ Like many others of her time, Mayreder interpreted Darwinian theories of evolution as providing a whiggish narrative of natural history, a process that resulted in the creation of ever-more superior organisms. For more on this common misreading of Darwin, see Howard L. Kaye, *The Social Meaning of Modern Biology: From Social Darwinism to Sociobiology* (New Haven: Yale, 1986); and Allan Megill, “Theological Presuppositions of the Evolutionary Epic: From Robert Chambers to E. O. Wilson,” *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 58 (August 2016): 24–32.

¹⁹⁵ Mayreder, *Survey*, 272.

¹⁹⁶ Cf. Weininger, *Sex and Character*, part 2, chapter 4.

¹⁹⁷ Mayreder, *Survey*, 259; translation altered.

evolution within the context of civilization. Stone Age women were too limited by their sex to be emancipated; it is only in the current age that the sexes have become similar enough to each other to make it possible to consider the prospect of women's emancipation *en masse*.¹⁹⁸ This trend will continue in the future, as human evolution proceeds toward the emergence of the synthetic human, for whom biological sex will pose no barrier at all.¹⁹⁹

Mayreder 'contra' Weininger

Scholars of *fin-de-siècle* Vienna have often commented on Mayreder's dispute with Weininger—indeed, this is perhaps the context in which Mayreder most frequently shows up in works of history.²⁰⁰ They have consistently read the dispute as evidence of a deep incongruity between two.²⁰¹ In contrast, I see Mayreder's criticism of Weininger as stemming from fundamental agreement about the nature of biological sex. Mayreder certainly disagrees with Weininger's *application* of his theory—and especially with his near-abandonment of the theory in the second part of *Sex and Character*—but her own theory concurs with the essential features of Weininger's biological system. Although Anderson argues that “It was a considerable achievement” for Mayreder (and other feminists of her era) “to be able to find the voice to retort

¹⁹⁸ See *ibid.*, 63.

¹⁹⁹ *Ibid.*, 273–74.

²⁰⁰ See, for example, Johnston, *The Austrian Mind*, 156–62; Beller, “Otto Weininger as Liberal?,” 283n9; Sengoopta, *Otto Weininger*, 146–47; and Leck, “Feminism Versus Misogynist Sexology”; Jacques Le Rider, *Modernity and Crises of Identity: Culture and Society in Fin-de-Siècle Vienna*, trans. Rosemary Morris (1990; New York: Continuum, 1993), 155–57.

²⁰¹ The only exception of which I know is Beller, “Otto Weininger as Liberal?” Beller agrees with me that Weininger and Mayreder are quite close in many respects; however, he makes this argument only in a footnote, and does not develop it further (283n9). Jacques Le Rider also does read Mayreder and Weininger as being particularly opposed, although he does not go so far as to argue that they are in agreement. Le Rider, *Modernity and Crises of Identity*, 157.

to bestsellers like Weininger's *Geschlecht und Charakter*," I see *A Survey of the Woman Problem* as offering not a *rejection* of *Sex and Character* but rather a *corrective*.²⁰²

Compare Mayreder's treatment of Weininger with her treatment of Cesare Lombroso, the leading phrenologist of the late nineteenth century and a fellow paladin of the attempt to scientifically prove the inferiority of women.²⁰³ With Weininger, Mayreder engages in a careful and—initially—neutral explication of his ideas over the course of several pages. She begins by praising him for searching “much more deeply” than other authors had “in his efforts to grasp the problem of sex gradation.”²⁰⁴ Note here that Mayreder signals the domain of her engagement with *Sex and Character*: she wants to evaluate Weininger's theory of sexual intermediacy. Mayreder's assessment is both fair and subtle. She lets Weininger himself do most of the heavy lifting, exposing the many inconsistencies in his text through careful juxtaposition of quotations. It is only at the end that she comes in to deliver the knockout punch:

By the roundabout way of an apparently very pithy biological theory, and with expenditure of an enormous amount of mental labour, Weininger's doctrine of gradation arrives at the ancient, clumsy, psychologically undifferentiated view which segregates men and women according to their primary sexual features into two widely separated antitheses. In this insufficiency of principle and failure of the basic problem, Weininger's work shows that the problem of sexual psychology remains insoluble so long as the

²⁰² Anderson, *Utopian Feminism*, 201.

²⁰³ The key text is Lombroso's 1893 work, *La Donna Delinquente*. This book was translated into German in 1894 (as *Das Weib als Verbrecherin und Prostituirte*), and in English in 1895 (as *The Female Offender*). The latter translation, however, was severely censored and abridged; this situation has been somewhat rectified in recent years by a new English translation of the book, which remains abridged, but far less heavily so. See Cesare Lombroso and Guglielmo Ferrero, *Criminal Woman, the Prostitute, and the Normal Woman*, trans. Nicole Hahn Rafter and Mary Gibson (Durham: Duke University Press, 2004).

²⁰⁴ Mayreder, *Survey*, 21; translation altered slightly. Le Rider concurs here: “[Mayreder] did not attack [Weininger] with the outrage and repulsion which at the time was the ordinary reaction of intellectual feminists to *Sex and Character*.” As a comparison, he cites the work of Grete Meisel-Hess, another prominent Viennese feminist of the time. Le Rider, *Modernity and Crises of Identity*, 157.

sexual antithesis is regarded as an essential separation and a radical difference, permeating the whole constitution as well as the psychic personality.²⁰⁵

In contrast, Mayreder's engagement with Lombroso shortly prior to her criticism of Weininger does not even last for a complete paragraph. She considers Lombroso's proposal that "the female sex is the less variable," which in her estimation means that "only the domain of normality or extreme anomaly seems represented in" Lombroso's conception of women. Consequentially, "the innumerable transitional forms which unite these two poles are wanting."²⁰⁶ In contrast to her treatment of Weininger, Mayreder is completely dismissive here, and in the next sentence she proclaims that "This is one of the many arbitrary and unproven assertions that show how purely subjective is the standpoint of Lombroso." After this statement, Mayreder does not mention Lombroso again for the rest of the essay.²⁰⁷

Perhaps Lombroso deserves such treatment—I am tempted to say that he *certainly* deserves such treatment—but it is notable that Mayreder affords so much more intellectual respect to Weininger. Evidently, she regarded him as worthy of actual analysis.²⁰⁸ I believe that the difference in her treatment of these two misogynists stems from a significantly greater agreement on Mayreder's part with Weininger's universal theory of sexual intermediacy than with Lombroso's halting attempts to wave away sexual variation, especially in women. As she writes, "The significance of Weininger's hypothesis lies principally in the endeavour to create a biological Formula for the infinite many-sidedness of individual development, and thus avoid the

²⁰⁵ Mayreder, *Survey*, 24.

²⁰⁶ *Ibid.*, 18; translation slightly altered.

²⁰⁷ Lombroso is cited in a few other places throughout *A Survey of the Woman Problem* (including earlier in the same essay), but his treatment elsewhere is even briefer than in this instance.

²⁰⁸ Judy Greenway noticed a similar phenomenon in her analysis of Weininger's reception among English anarcho-feminists. See Greenway, "It's What You Do with It That Counts"

false inferences which arise from the dependence upon general types.”²⁰⁹ Weininger’s failure comes when he completely abandons his empirical distancing from the use of ideal types in the second part of the book, which, Mayreder argues, “completely annuls the suppositions of the first” part.²¹⁰ The problem, then, is not Weininger’s theory of sex so much as his betrayal of it.

Toward the end of the book, Mayreder briefly returns again to Weininger. Shortly after she finishes describing her pendulum metaphor for sexual differentiation, she writes: “These [sexual] gradations do not mean (as Weininger thought) that the approximation of the manly to the womanly necessitates the man being less manly or the woman less womanly. They have nothing to do with the feminine man nor with the masculine woman.” Instead, the truly synthetic human “does not become lower through his compound nature, he loses nothing; he gains. The approximation towards unity carries him beyond sex towards what is neither male nor female, but purely human.”²¹¹ Here again Mayreder seems to insist that Weininger was essentially correct in his theory of sex, but incorrect, to use today’s terminology, in his theory of gender. Using my terminology, one might also propose that Mayreder agreed with Weininger in assigning ontological priority to sex over gender, but she also recognized the errors in his theory that stemmed from an intellectual priority of gender over sex. Mayreder could use the same conception of sex as Weininger for her own purposes—namely, abolishing absolute distinctions between men and women—but first it was necessary to cleanse it of his misogynistic (mis)application.

²⁰⁹ Mayreder, *Survey*, 22.

²¹⁰ *Ibid.*, 23.

²¹¹ *Ibid.*, 270.

Conclusion: Political and Scientific Values

My claim in this chapter—that there is a great deal of intellectual similarity between Otto Weininger, Anna Rüling, and Rosa Mayreder, particularly with respect to their conceptions of biological sex—is not superficially obvious. But as I have shown, the three authors share a definition of biological sex consisting of a spectrum with an infinite (or nearly-infinite) number of configurations between the poles of ‘ideal,’ ‘whole,’ or ‘absolute’ male and female. Although the three authors put this idea to very different uses, this basic agreement between them is striking. These thinkers were not the first to propose a non-binary model of biological sex within a modern framework, but their ideas stand out for the universality of their application, and the fact that they were directed toward non-scientific audiences. In the context of Germany and Austria in the years 1903–5, all three authors can reasonably be considered to possess a radical understanding of biological sex. Moreover, all three were radical in the same way.

But what should we take from this fact of agreement between an apostle of misogyny and two philosophers of feminism? For one, it tells us quite a bit about the degree to which science had become at this time the arbiter of truth for the sexed body. Weininger, Rüling, and Mayreder all sought to make an argument about the social character of masculinity and femininity, and all found it necessary to ground their arguments in the latest physiological research. They disagreed about the social implications of that research, of course, but they accepted the basic claim of science to offer truths about what we today would refer to as sex, gender, and sexuality. All three authors evidently believed that they needed to show a large degree of familiarity with the state of natural science, and all three also evidently believed that their social theories could only be built upon a proper biological base.

Perhaps more importantly, at least for those of us living today, this agreement between Weininger, Riling, and Mayreder should serve as a reminder that socio-scientific definitions and politico-cultural valuation do not always coincide. Many of today's readers may agree that sexual spectrum theories such as those advocated by the subjects of this essay—or such as those advocated by many of today's trans rights activists—tend to align with progressive and liberalizing politics. However, Weininger's application of such a theory shows that this progressive harmonization should not be taken for granted. (Indeed, the next two chapters will give further examples of thinkers who did not actualize the progressive potential of their spectral theories of sex.) Those of us who endeavor today to change inequitable definitions of sex, gender, and sexuality must remember that such changes may be useless if they are not also accompanied by a strong sense of respect and social justice. Without a recognition of the fundamental human equality possessed by all people, even the most expansive definition of sex will offer only a reinscription of the oldest patterns of oppression.

Chapter 2

Sexual Chemistry: Charles-Edouard Brown-Séquard, Eugen Steinach, and the Endocrinological Revolution

Even in nature the line of demarcation between the sexes is not as sharp as is generally taken for granted. Absolute masculinity or absolute femininity in any individual represents an imaginary ideal. A one hundred percent man is as non-existent as a one hundred percent woman.

Eugen Steinach¹

Endocrinology, the study of the ‘organs of internal secretion’ and of the hormones they produce, is a relatively recent field of physiology. In his authoritative history of the subject, V. C. Medvei claims intellectual roots going back to prehistoric times, but it is only in chapter 15 that we encounter “The Birth of Endocrinology—Part I.”² But when the field finally took form in the late nineteenth century, endocrinology, and especially sexual endocrinology, quickly excited the interest of research scientists throughout the US and Europe. Even the event commonly taken as the official starting point of the field—Charles-Édouard Brown-Séquard’s announcement in 1889 to the Paris Society of Biology that he had “rejuvenated” himself in his old age through “the subcutaneous injection” of animal testicular extracts—has something of the air of a media

¹ Eugen Steinach, *Sex and Life: Forty Years of Biological and Medical Experiments* (New York: The Viking Press, 1940), 7. Though written by Steinach in German, this book, his intellectual autobiography, was only published in English. The official translator is unlisted, although Harry Benjamin performed significant correction work on the original translation of the manuscript, which he regarded as “frankly impossible and catastrophic” (geradezu unmöglich und katastrophale). Harry Benjamin to Eugen Steinach, September 8, 1939, Box 2, Eugen Steinach–Harry Benjamin Correspondence, Rare Book and Archive Collection, New York Academy of Medicine, New York, NY (hereafter cited as “NYAM”). For details on Benjamin, see note 49, below.

² V. C. Medvei, *The History of Clinical Endocrinology: A Comprehensive Account of Endocrinology from Earliest Times to the Present Day*, rev. ed. (1982; New York: Parthenon, 1993).

extravaganza.³ Although many in the medical establishment treated Brown-Séquard's procedure with skepticism and even outright mockery, and his death a few years later didn't help his claims of "rejuvenation," the promise of renewed youth and sexual vigor spurred endocrinological research for decades.⁴

The gonads occupied a prime place in the early history of endocrinology. Many of the first endocrinological discoveries that were explicitly recognized as such by contemporaries relate to the hormonal activities of the ovaries and testicles, which many scientists and doctors in the early twentieth century considered to be far and away the most important participants in the endocrine system. The American scientist Henry Smith Williams referred to them in a popularizing work as "the star performer"; he contended that, even among all the other glands of the body, the gonads were in another class of importance.⁵ For many scientists, the gonads offered the key to unlocking life's mysteries.

In this chapter I argue that the intellectual foundations of endocrinological research in the early twentieth century implicitly, and occasionally explicitly, rested on the idea of a sexual

³ Brown-Séquard's announcement was published as Charles-Édouard Brown-Séquard, "Des effets produits chez l'homme par des injections sous-cutanées d'une liquide retiré des testicules frais de cobaye et de chien," *Comptes rendus hebdomadaires de séances et mémoires de la Société de Biologie* 9, no. 1 (1889): 415–19. The quotations from the above sentence come from an article published a few months later, "Expérience démontrant la puissance dynamogénique chez l'homme d'un liquide extrait de testicules d'animaux," *Archives de physiologie normale et pathologique* 5, no. 1 (1889): 651–58, at p. 651.

⁴ On opinions of late-nineteenth- and early-twentieth-century medical doctors about Brown-Séquard, see Medvei, *History of Clinical Endocrinology*, 159–166; Merriley Borell, "Organotherapy, British Physiology, and Discovery of the Internal Secretions," *Journal of the History of Biology* 9, no. 2 (1976): 235–68; and Merriley Borell, "Brown-Séquard's Organotherapy and Its Appearance in America at the End of the Nineteenth Century," *Bulletin of the History of Medicine* 50, no. 3 (Fall 1976): 309–20.

⁵ Henry Smith Williams, *Your Glands and You* (New York: Robert M. McBride & Co., 1936), 128.

spectrum. It is not an overstatement to say that in these decades the very foundations of the scientific understanding of biological sex were radically altered. In the minds both of scientists and also of much of the broader public, sex moved from a static designation to a malleable attribute. Previously, it was a (usually) simple physiological classification that indicated which of two biological types one belongs to. Now, one's type depended on a chemical entity that permeates the entire body. What mattered most was no longer which organs one possesses, but what one's hormonal balance is at any given moment. In short, defining sexual biology in chemical terms opened intellectual space for the possibility of conceiving of sex as a spectrum.

Within the ranks of early-twentieth-century endocrinologists, the Austrian scientist Eugen Steinach (1861–1944) stands as the figure most responsible for proving the existence of gonadal hormones. Today, Steinach has mostly faded from public memory, and often even from the history of endocrinology.⁶ In recent years, however, he has again come to notice (especially in gender-focused history) for his experiments on guinea pigs in the 1910s, in which he proved that, under certain conditions, guinea pigs born male can be induced to develop female secondary sexual characteristics.⁷ *Mutatis mutandis*, the same results could be achieved with guinea pigs

⁶ In the introduction to their recent translation of one of Steinach's later works, Per Södersten and his coauthors complain that "Steinach's basic research was rarely acknowledged as the field [of endocrinology] flourished after 1950." For example, Rex Hess mentions in a review article that "It was known as early as the 1930's that the developing testis was responsive to the 'female' hormone," when in fact Steinach's research had indicated this a decade and a half before. In contrast, however, V. C. Medvei mentions Steinach on several occasions, and includes him among the figures deemed important enough to receive a biographical sketch in the back of the book (along with one hundred fifty-three others). Per Södersten et al., "Eugen Steinach: The First Neuroendocrinologist," *Endocrinology* 155, no. 3 (March 1, 2014): 688–95, at 688; Rex A. Hess, "Estrogen in the Adult Male Reproductive Tract: A Review," *Reproductive Biology and Endocrinology* 1 (2003): 52; Medvei, *History of Clinical Endocrinology*, 472.

⁷ See, for example, Anne Fausto-Sterling, *Sexing the Body: Gender Politics and the Construction of Sexuality* (New York: Basic Books, 2000); Joanne Meyerowitz, *How Sex Changed: A History of Transsexuality in the United States* (Cambridge, MA: Harvard University Press, 2002); and

born female. The implications of this research for the basic biological definition of sex were potentially revolutionary. As Steinach himself put it almost thirty years later in his intellectual autobiography, “This experiment had converted males into females.”⁸ If one sex can be transformed into another, then the entire Enlightenment conception of binary sexual opposition is called into question.

In part, this chapter offers a story of a revolution in the scientific understanding of biological sex.⁹ But it is also a story about the general lack of a distinction in the minds of turn-of-the-century biologists between what we today would call gender, sex, and sexuality. Many of these thinkers held, consciously or subconsciously, that sexual biology is determinative of gendered behavior and sexual desire. Partly as a result of this belief, the transgressive potential of Steinach’s research (and that of other scientists as well) to challenge the supposed biological naturalness of gender roles was never realized.¹⁰ In fact, in Steinach’s writing much the opposite effect seems to have occurred. Even if ‘pure’ males and females could only exist as an ideal (and therefore fictional) type, the ‘idealness’—that is, the normativity—of that type did not go away.

Solidism, Humoralism, and the Quasi-Mystical Origins of Endocrinology

By the end of the 1930s, endocrinological discoveries had completely changed the scientific

Chandak Sengoopta, *The Most Secret Quintessence of Life: Sex, Glands, and Hormones, 1850–1950* (Chicago: University of Chicago Press, 2006).

⁸ Steinach, *Sex and Life*, 65.

⁹ For a broader history of scientific conceptions of sex at the turn of the century, see Nathan Q. Ha, “The Riddle of Sex: Biological Theories of Sexual Difference in the Early Twentieth-Century,” *Journal of the History of Biology* 44, no. 3 (2011): 505–46.

¹⁰ As Steinach wrote in *Sex and Life*: “Everyone knows, even without books, that men are generally hardier, more energetic, and more enterprising than women, and that women show a greater inclination for tenderness, devotion, and a tendency to nestle and cling, at the same time demonstrating a practical aptitude for domestic problems.” *Sex and Life*, 39.

understanding of the body. During the nineteenth century, the dominant biological paradigm emphasized the organizational role of the nervous system. In this ‘solidist’ intellectual system, the body was thought of as a relatively static entity governed by a vast assemblage of electro-mechanical wires sending signals around the body. The new endocrinological system, on the other hand, was ‘humoralist’ (or ‘neo-humoralist’) in character, emphasizing not just the circulation of chemicals throughout the body, but also the possibility of changing the body by altering the balance of those chemicals.¹¹ Thus we can think of the endocrinological revolution as ushering in two distinct, yet intertwined, changes to the scientific vision of the body. First, it presented a new bodily system for the regulation and transmission of information (namely, the endocrine system); second, it increasingly understood the body as plastic and malleable. While the first of these changes might be seen as merely additive in character, the second was transformative.¹²

¹¹ Here I follow Sengoopta’s lead in labeling the old neural paradigm ‘solidist’ and the lead of many (including Sengoopta) in labeling the new paradigm ‘humoralist.’ The opposition of these terms is ancient, going back at least as far as Asclepiades’s atomic (solidistic) theory of medicine, which he conceived in opposition to the humoral theory of Hippocrates. Sengoopta elaborates this terminology as follows: “‘Solidism’ and ‘humoralism’ are simple labels for complex (and internally diverse) orientations. For our purposes, we can define humoralism narrowly as the view that, within the body, actions at a distance are mediated by circulating fluids; and solidism as the opposed conviction of distant action being mediated by solid structures, most notably the nerves.” Sengoopta, *Quintessence of Life*, 216n5. See also Medvei, *History of Clinical Endocrinology*, 3; and Robert J. Miciotto, “Carl Rokitansky: A Reassessment of the Hematohumoral Theory of Disease,” *Bulletin of the History of Medicine* 52, no. 2 (Summer 1978): 183–199.

¹² In fact, it is an oversimplification to view the first change as strictly additive. For many years following the first major endocrinological developments, the nervous system tended to be discounted almost entirely, particularly in its regulatory capacity. Since the 1930s, however, science has generally focused on the ways in which the endocrine and nervous systems cooperate with and supplement each other. See Medvei, *History of Clinical Endocrinology*, 3, as well as chapters 18–23.

For more than a century now, biological science has understood the body as possessing two information systems: the nervous system and the endocrine system. While the nervous system is (primarily) electrical, the endocrine system is chemical—but both systems function to carry messages around the body. However, for much of the nineteenth century it was thought that only neurons are capable of regulating the body and transmitting information. Because scientists and doctors of the era worked within this solidistic paradigm, they understood many of the organs of the body in a way that can seem remarkably foreign to present-day science.¹³ Prior to the endocrinological revolution, the gonads (and especially the ovaries) were thought to be primarily governed by the nerves. It was known that the gonads produced gametes (i.e., spermatozoa and ova), but any other functions of the testicles and ovaries could be only vaguely articulated.¹⁴ Frequent hypotheses about such functions did occur, but they tended to focus on electrical or mechanical influence on or from the nervous system.

Today, biologists and medical doctors understand the gonads to have two primary functions. First, they have a *reproductive* function: the germinal cells in gonads produce gametes, the cells that are capable of sexual reproduction. These gametes are delivered to the rest of the reproductive system through specialized ducts (fallopian tubes in females, vasa deferentia in males) that have long been known to science. Second, the gonads have an *endocrine* function: the ‘interstitial’ cells in gonads produce hormones, such as testosterone and estrogen, which are secreted directly into the bloodstream. In part owing to the lack of a visible duct, this second, endocrine function remained unclear until the late nineteenth century. Thus, for example, the

¹³ Of course, it wasn’t only scientists that understood the body this way. The solidistic paradigm can also be seen in the frequent references to “nervous disorders” in *fin-de-siècle* literature, including J. K. Huysmans’s *Against Nature* (1884), Thomas Mann’s *Buddenbrooks* (1901), and Rainer Maria Rilke’s *The Notebooks of Malte Laurids Brigge* (1910).

¹⁴ See Sengoopta, *Quintessence of Life*, chapter 1.

lack of attention paid to Arnold Adolf Berthold, a physiologist from Göttingen. In 1849 Berthold conducted an experiment investigating the degree to which mature roosters could be induced, through testicular manipulation and removal, to produce behavior expected in a capon. Today, this experiment is often regarded as an anticipation (by four decades) of many of the principles of endocrinology, but it attracted practically no notice at the time, seemingly because it was incompatible with a solidistic view of the body.¹⁵

A pair of late nineteenth-century articles from Eugen Steinach and from the Georgian scientist Ivan Romanovich Tarkhanov (Ivane Tarkhnishvili) provide an apt example of the solidistic interpretation of the gonads. In 1887 Tarkhanov published research indicating that sexual excitation in frogs is caused not by hormonal activity, as we understand it today, but rather by the swelling of the seminal vesicles.¹⁶ He argued that this swelling placed mechanical pressure on the nerves near the seminal vesicles, which sent a signal to the brain that caused male frogs to cling vigorously to their female counterparts in advance of sexual activity. Tarkhanov further hypothesized that the same basic mechanism may be responsible for sexual behaviors in mammals (including humans).¹⁷ By the standards of the solidistic paradigm, this was a reasonable explanation, but Steinach, still in the early stages of his career, found Tarkhanov's

¹⁵ Arnold Adolf Berthold, "Transplantation der Hoden," *Archiv für Anatomie, Physiologie, und wissenschaftliche Medicin*, 1849, 42–46. An English translation of this article was published almost a century later by D. P. Quiring, "The Transplantation of Testicles," *Bulletin of the History of Medicine* 16 (1944): 399–401. For a brief historical account, see Clark T. Sawin, "Arnold Adolph Berthold and the Transplantation of Testes," *Endocrinologist* 6, no. 3 (May 1996): 164–68.

¹⁶ Ivan Romanovich Tarkhanov, "Zur Physiologie des Geschlechtsapparates des Frosches," *Archiv für die gesammte Physiologie des Menschen und der Thiere* 40 (1887): 330–51.

¹⁷ *Ibid.*, 351.

account implausible. In 1894 he published a critique of the Georgian scientist's theory.¹⁸ There he showed, through experiments on frogs and also on rats, that emptying or even entirely removing the seminal vesicles actually had no effect upon either the "sexual instinct" (*Geschlechtstrieb*) or sexual intercourse itself for the test animals. Pushing these results further, Steinach experimented with castrating his test subjects and found that, while removing the testicles *after* puberty had little effect upon the sexual activity of rats, removing the testicles *before* puberty brought about a significant diminution of the rats' sexual activity.¹⁹ He also noticed that certain secondary sexual organs, including the seminal vesicles, were markedly reduced in size compared to "normal" animals or those castrated after puberty. From this he concluded that seminal vesicles have nothing to do with driving sexual instinct, and also that their size (along with that of the prostate) is a useful measuring rod of the degree to which puberty had successfully taken place. He further determined that the testicles play some sort of key role in enabling sexual development, but the precise character of that role remained unknown.

Steinach saw his work as refuting Tarkhanov's article. Near the end of his life, he somewhat sarcastically suggested that, according to Tarkhanov's theory, swelling seminal vesicles cause a frog's clinging response in the manner that "the pressure on a button will send

¹⁸ Eugen Steinach, "Untersuchungen zur vergleichenden Physiologie der männlichen Geschlechtsorgane insbesondere der accessorischen Geschlechtsdrüsen," *Archiv für die gesammte Physiologie des Menschen und der Thiere* 56 (1894): 304–38, at 312. In *Sex and Life*, Steinach claims that it was an 1892, rather than 1887, article by Tarkhanov that spurred him toward endocrinological research. However, this seems to be an error, as Steinach's 1894 article refers to the 1887 Tarkhanov piece.

¹⁹ This experiment also provided the origin of Steinach's "infantile castrate" technique, which he put to much more extensive use in his experiments of the 1910s.

an electric signal along a wire and cause a bell to ring.”²⁰ Indeed, perhaps the most historically notable aspect of Tarkhanov’s essay is simply that it served as the stimulus that set Steinach off on his endocrinological career.²¹ However, with the exception of a brief reference to “the secreting functions of the gonads”—which in context seems to refer more to the gonads’ gamete-producing capabilities than to their hormone-producing capabilities—there is no evidence that Steinach was thinking at this point in an endocrinological mode.²²

From the perspective of the present, Steinach’s conclusion that the testicles play an important but uncertain role in sexual development may seem surprising. Shouldn’t this have been *obvious*? As Steinach himself pointed out decades later, farmers have castrated their animals for millennia, and they “certainly did not remove the sex glands in order to produce impotence.”²³ There was indeed a broad awareness at this time that the testicles and especially the ovaries do not merely relate to fertility, but also have a wide-ranging effect on the physiology of the entire organism.²⁴ And popular understandings of the body have long connected the testicles in particular to a general concept of sexual potency and proclivity. As the anthropologist David Gilmore points out (although he was hardly the first to do so), in many cultures

²⁰ Steinach, *Sex and Life*, 15. Steinach continues: “It was thought that the seminal vesicles, filled to capacity, exercise pressure on the nerve endings in consequence of increased tension, and that in turn these nerve endings convey the stimulus to the brain. The brain then passes the order on to the paws of the frog, that they shall seize the female and cling to her until discharge of the semen releases the tension.”

²¹ On this point, it is notable that a recent biography-article on Tarkhanov does not mention this research on frogs at all. See Merab G. Tsagareli, “Ivane Tarkhnishvili (Tarchanoff): A Major Georgian Figure from the Russian Reform School,” *Journal of the History of the Neurosciences* 21 (2012): 393–408.

²² Steinach, “Untersuchungen zur vergleichenden Physiologie,” 338. “...der secretorischen Funktionen der Keimdrüsen.”

²³ Steinach, *Sex and Life*, 36.

²⁴ See Sengoopta, *Quintessence of Life*, 39–55.

throughout the world it is thought that the bigger the balls, the more manly the man.²⁵ But such broad impressions are rather different from acceptable scientific knowledge; moreover, it is difficult to conceive of the gonads as affecting the entire body when there is little knowledge of any mechanism through which that effect could occur.

Nevertheless, such thoughts were hardly foreign to Charles-Édouard Brown-Séquard (d. 1894), the bombastic father of endocrinology. In an article defending his self-experimentation with testicular extracts, Brown-Séquard declared it to be common knowledge that men without testicles (whether from injury, disease, or a failure to descend) “are degraded beings.” “There can be no doubt to anyone,” he continued, “that the testicles give man his most noble and his most useful attributes. Do we not say of an active, intelligent, frank, honest, courageous, and strong man: there is a real male?”²⁶

Brown-Séquard was a noted researcher, who was well-known and respected throughout the US and Europe.²⁷ He was a member of the (French) Académie des Sciences, the (British) Royal Society, the American Academy of Arts and Sciences, and the (American) National Academy of Sciences. However, in the wake of his announcement of “rejuvenation” through testicular extracts, that reputation was almost destroyed. Three weeks after his announcement, the *British Medical Journal* recorded dryly that Brown-Séquard’s statements, “which have unfortunately attracted a good deal of attention in the public press,” had been greeted with

²⁵ David Gilmore, *Manhood in the Making: Cultural Concepts of Masculinity* (New Haven: Yale University Press, 1990), 23.

²⁶ Brown-Séquard, “Expérience démontrant la puissance dynamogénique,” 652 ; “Ce sont des êtres dégradés. Il ne peut être douteux pour personne que c'est là une preuve que les testicules donnent à l'homme ses plus nobles et ses plus utiles attributs. Ne dit-on pas d'un homme actif, intelligent, franc, honnête, courageux et fort : c'est un véritable mâle ?”

²⁷ See Borell, “Organotherapy and Its Appearance in America”; and Medvei, *History of Clinical Endocrinology*, 159–60.

skepticism from his colleagues.²⁸ The *Wiener medizinische Wochenschrift* declared that “The lecture must be regarded as further proof for the necessity of retiring professors who have attained their threescore years and ten.”²⁹ Edward Berdoe of the Royal College of Physicians circulated a private letter containing a particularly sharp reaction:

The object of these abominable proceedings is to enable broken down libertines to pursue with renewed vigor the excesses of their youth, to rekindle the dying embers of lust in the debilitated and aged, and to profane the bodies of men which are the temples of God... We may also have a new race of beings intermediate between man and the lower animals as a remoter consequence of the boon to humanity conferred by French physiology.³⁰

For decades to follow, practicing endocrinologists grimaced at the thought that their field had been born in such a popularizing manner, and accused Brown-Séquard of delivering the new science nearly dead on arrival.³¹

²⁸ “The Pentacle of Rejuvenescence,” *The British Medical Journal* 1 (June 22, 1889): 1416. My attention was drawn to this notice by Borell, “Organotherapy, British Physiology, and Discovery of the Internal Secretions,” 237.

²⁹ Quoted in Steinach, *Sex and Life*, 49–50.

³⁰ Edward Berdoe, “Serious moral questions” (letter printed for private circulation), 12 July 1889, MS 980/67, Archives, Royal College of Physicians, quoted in Michael J. Aminoff, *Brown-Séquard: A Visionary of Science* (New York: Raven Press, 1993), 165–66.

³¹ See Medvei, *History of Clinical Endocrinology*, 159–66; and Sengoopta, *Quintessence of Life*, 36–39. For a particularly acerbic treatment of Brown-Séquard almost eighty years after his announcement, see Hans Lisser, “The Endocrine Society—The First Forty Years (1917–1957),” *Endocrinology* 80 (1967): 5–28, at p. 7. Brown-Séquard’s legacy was not universally seen in a negative light, however—Max Thorek in 1943 referred to Brown-Séquard’s announcement as his “greatest day” and proclaimed that “an old man gave a new thrill to science.” Max Thorek, *A Surgeon’s World: An Autobiography* (Philadelphia: Lippincott, 1943), 177. For more on Brown-Séquard, see the biographical works by Michael J. Aminoff, *Brown-Séquard: A Visionary of Science*; and *Brown-Séquard: An Improbable Genius Who Transformed Medicine* (Oxford: Oxford University Press, 2011).



Figure 2.1: An American cartoon, depicting Democratic congressman Samuel J. Randall as Brown-Séquard. Randall believed that his party, having strayed from economic protectionism, could no longer be revived. The caption reads: “Dr. Brown-Séquard Randall—‘Take them away! They’re too near dead for treatment.’”³²

Nevertheless, a sensationalistic press immediately popularized Brown-Séquard’s announcement, and medical practitioners throughout the US and Europe began performing all sorts of procedures on patients based on the principle behind Brown-Séquard’s self-experimentation. Some of these practitioners were exploitative quacks, but many were legitimate doctors operating on the basis of what they saw as sound science. As Merriley Borell writes, “Within weeks [of Brown-Séquard’s announcement], testicular extract was being given to patients with every kind of illness. Within two years, many physicians thought that not only the testes,

³² Image published in Michael J. Aminoff, “The Life and Legacy of Brown-Séquard,” *Brain* 140, no. 5 (May 1, 2017): 1525–32. Aminoff lists the image’s source as the Bert Hansen Collection, Medical Historical Library, Harvey Cushing / John Hay Whitney Medical Library, Yale University, New Haven, CT. The image originally appeared in the US magazine *Judge*, August 31, 1889.

but every organ of the body, possessed some active principle which might be of immediate therapeutic value.”³³ This new practice, known as “organotherapy,” prescribed injections of various organ “extracts” (usually created by mixing a macerated animal organ with water) as a potential cure for all sorts of ailments. Gonadal extracts attracted the most attention in the immediate aftermath of Brown-Séquad’s announcement, but injections of extracts from other organs became commonplace as well, and some (such as thyroid and adrenal extracts) even proved to have legitimate therapeutic value.³⁴ Organotherapeutic drugs—most of which were not efficacious—continued to be offered on the consumer market for some time. (For example, until 1933 Magnus Hirschfeld endorsed a product known as “Titus Pearls,” an erectile dysfunction drug made in part from bull testicles.³⁵)

To a certain extent, the idea of organotherapy was nothing new. As Medvei points out, ingestion of certain organs to gain benefits attributed to that organ (eating a heart to increase one’s courage, for example) has been around since prehistoric times.³⁶ Certainly, much of “the method of Brown-Séquad” was rooted in pseudo-Aristotelian notions of biological ‘principals’—it is no accident that the endocrinological revolution has been characterized as humoralist.³⁷ But if the idea was an old one, it accorded with common understandings of the

³³ Borell, “Organotherapy and Its Appearance in America,” 310.

³⁴ *Ibid.*, 310.

³⁵ Hirschfeld was also at least somewhat involved in developing the recipe for the drug, which was based on an earlier preparation of his that he called Testifortan. The manufacturer of Titus Pearls ended its association with Hirschfeld after the election of the Nazi government, although it continued to sell the drug until 1941. Today, it is doubtful that the drug had any non-placebo effect. A Rep. 250-02-00 Nr. 80, Nr. 96, Nr. 99, Nr. 100, Landesarchiv Berlin, Germany.

³⁶ Medvei, *History of Clinical Endocrinology*, 7.

³⁷ Cf. Benjamin Harrow, *Glands in Health and Disease* (New York: E. P. Dutton & company, 1922).

body, which helps to explain its popularity. For an average city dweller at the time, who may not have had much medical knowledge but who would have easily associated testicles with energy and virility, and who would also have had some awareness of the potentially significant effects of injections of foreign substances (notably vaccines) into the body, it seems likely that organotherapy would have made intuitive sense.³⁸ Moreover, as Borell notes, Brown-Séguard's experiments were fully congruent with the then-common understanding of semen as a male energy source that ought to be carefully maintained. Indeed, as early as twenty years prior to his "rejuvenation" announcement, Brown-Séguard had suggested that "if it were possible to inject, without danger, sperm into the veins of old men, one would be able to obtain with them some manifestations of rejuvenation at once with respect to intellectual work and physical powers of the organism."³⁹

Organotherapy, then, was rooted from its beginnings in a quasi-mystical understanding of the body and of the operation of the organs. Looking at the medical trend in this way helps explain the skepticism of many of the medical journals to Brown-Séguard's proposed organotherapy, as well as the hostility with which he was remembered even decades later by many endocrinologists once the field had been firmly established. But for all its pseudo-science, many of the basic ideas behind organotherapy were actually on the right track. Steinach, looking

³⁸ It is reasonable to suppose that even many poor city dwellers would have had cursory knowledge of vaccination by the end of the nineteenth century. In the United Kingdom, for example, smallpox vaccinations had been mandatory for infants since the passage of the Vaccination Act in 1853 (although Parliament introduced some exceptions to the legal requirement in 1898 and 1907).

³⁹ Quoted in Borell, "Organotherapy and Its Appearance in America," 311. The idea of semen as an energy source dates back to classical forms of humoralism. In those older views, semen was understood as a crucial source of the body's heat, and thus as a source of the body's potentially-exhaustible maleness. See also Thomas W. Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* (Cambridge, MA: Harvard University Press, 1990), chapter 2.

back on the development of his field, would later write that “In the absence of any objective proof for his theory, Brown-Séquard failed to convince his contemporaries that his observations were of any value. Nevertheless, his intuitions were certainly correct.”⁴⁰ Indeed, the confluence between the intuitions of organotherapy and popular understandings of the functions of organs was an important spur for the development of the more rigorous science of endocrinology in its early days.

The important point here is what organotherapy implied about biological possibilities. The method of Brown-Séquard promised not just a cure for a disease but also an entire remaking of the body. Nineteenth-century science tended to produce understandings of human biology as fixed and determined. From racialism to phrenology to degeneracy theory, the dominant understanding of the body was one of immutable truth waiting to be discovered. Organotherapy spat in the eye of those tendencies. To be sure, the method of Brown-Séquard was also a product of its age. Its dedication to quasi-mystical ‘principles’ hidden within organs was rooted in much the same thought process as that which declared that the shape of a brainpan could determine criminality. But in its confidence that human biology could be radically altered, indeed remade into something new, organotherapy was prophetic of the new plasticity of the human body that endocrinology would enshrine in the decades to come.

Gonadal Transplantation and the Plasticity of Sex

In many ways, Eugen Steinach’s career can be thought of as a quest to discover the objective proof of gonadal influence that Brown-Séquard lacked. That quest led him to conduct research projects of broadly varying subject and scope. According to Steinach’s retelling of his life, his

⁴⁰ Steinach, *Sex and Life*, 50.

scientific career took a turn for the sexual in 1894 (the same year as Brown-Séquad's death). At the time he was working at the Charles University in Prague (in the German half of the university) as a *Privatdozent* and also as a research assistant to Ewald Hering, the originator of color opponent theory.⁴¹ He was in his early thirties and had a handful of publications to his name concerning the “general physiology of muscles and nerves,” but nothing groundbreaking.⁴² He himself would later shrug off his research of those years as “not entirely satisfactory.”⁴³ But Steinach declares that after the publication of his article arguing against Ivan Tarkhanov's solidistic theories of sexual instinct, he became “chained to the complex of sex problems for the remainder of my life.”⁴⁴

In fact, Steinach somewhat oversimplified the trajectory of his career. While the 1894 critique of Tarkhanov, his sixteenth publication overall, marked Steinach's first step into the world of sexual physiology, his next publication in that field would not come until 1910.⁴⁵ In the intervening sixteen years Steinach continued to work on much the same issues that had concerned him before 1894. His ten articles published in these years address such varied physiological issues as the “Motor functions of posterior spinal nerve roots,” “Centripetal

⁴¹ Color opponent theory, which has roots in Johann van Goethe's *Theory of Colors* (1810), proposes that the human visual system processes information about color by combining signals from the eyes' cones and rods antagonistically. The theory is still current today, although it has seen some modifications since Hering's initial proposal in 1892.

⁴² Steinach, *Sex and Life*, 14.

⁴³ Harry Benjamin, “Eugen Steinach, 1861–1944: A Life of Research,” *The Scientific Monthly* 61, no. 6 (1945): 427–42, at 428.

⁴⁴ Steinach, *Sex and Life*, 22.

⁴⁵ The number of articles published by Steinach is derived from the bibliography of his writings in *Sex and Life*, 237–43. It is possible that he omitted certain minor articles that ought to be counted as well, but I do not know of any such omissions. The 1894 article mentioned above is Steinach, “Untersuchungen zur vergleichenden Physiologie.”

excitation conduction within the sphere of the spinal ganglion,” and “Locomotor function of light in cephalopods.”⁴⁶ Intriguingly, while Steinach recalled an early opposition to solidism (or what he called the “mechanistic interpretation of life which was current at that time”), and while his 1894 article indeed suggested the influence of the gonads upon the entire body, on the whole Steinach’s research output prior to 1910 suggests that he remained indebted to solidistic ways of thinking for far longer than he would have liked to admit.⁴⁷

In any case, it was with the 1910 publication of “Sexual instinct and true secondary sexual characteristics as a result of the inner-secreting function of the gonads” that Steinach’s career began to focus exclusively upon issues of sexual endocrinology.⁴⁸ In the intervening years he had climbed through the ranks of German-speaking academia. In 1902 he opened a research laboratory at Charles University for “general and comparative physiology,” which Harry Benjamin praised as “the first of its kind in German-speaking countries”; in 1907 the university granted him the title of *ordentlicher Professor* of physiology.⁴⁹ By 1910 he had begun to conduct

⁴⁶ Eugen Steinach, “Motorische Funktionen hinterer Spinalnervenzwurzeln,” *Archiv für die gesammte Physiologie des Menschen und der Thiere* 63 (1895): 593–622; Eugen Steinach, “Über die centripetale Erregungsleitung im Bereiche des Spinalganglions,” *Archiv für die gesammte Physiologie des Menschen und der Thiere* 78 (1899): 291–314; Eugen Steinach, “Über die lokomotorische Funktion des Lichtes bei Cephalopoden,” *Archiv für die gesammte Physiologie des Menschen und der Thiere* 87 (1901): 38–41. The title translations given above come from *Sex and Life*.

⁴⁷ Steinach, *Sex and Life*, 16.

⁴⁸ Eugen Steinach, “Geschlechtstrieb und echt sekundäre Geschlechtsmerkmale als Folge der innersekretorischen Funktion der Keimdrüsen,” *Zentralblatt für Physiologie* XXIV, no. 13 (September 17, 1910): 551–66.

⁴⁹ Benjamin, “Eugen Steinach, 1861–1944,” 428. An *ordentlicher Professor* is somewhat equivalent to a chaired professor in the present-day American academy. Harry Benjamin (1885–1986) was a German-American sexologist who is today remembered primarily for his work on transsexuality and transgenderism. His 1966 work, *The Transsexual Phenomenon*, which was the first book-length medical investigation of trans issues, advocated for affirmative therapies including reassignment surgeries and hormone therapies. Benjamin made contact with Steinach no later than 1920, and he quickly became Steinach’s greatest acolyte in the United States. The

at least some of his research at Vienna's Biological Research Institute (*biologische Versuchsanstalt*, sometimes translated as the Institute for Experimental Biology), which would serve as his academic home until the Nazi *Anschluss* of Austria in 1938.⁵⁰ Two years later, at the age of 51, he would become the research director of the Institute's Physiological Department. In 1919, he was granted a professorship at the University of Vienna.⁵¹

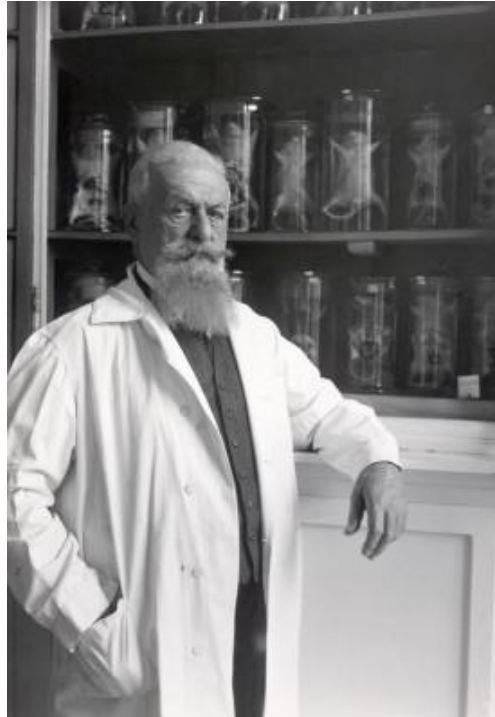


Figure 2.2: Eugen Steinach, posing in front of several preserved test subjects⁵²

two also engaged in regular correspondence from 1920 until Steinach's death in 1944, which today constitutes the main documentary source of information about Steinach's life. That correspondence is held in the archives of the New York Academy of Medicine.

⁵⁰ On Steinach's professional biography, see Ernest Harms, "Forty-four Years of Correspondence between Eugen Steinach and Harry Benjamin," *Bulletin of the New York Academy of Medicine* 45, no. 8 (1969): 761–766; in addition to Benjamin, "Eugen Steinach, 1861–1944." Both of these documents claim that Steinach did not go the Institute in Vienna until 1912; however, he apparently had some contact with the Institute before this point, as a 1910 article of his claims that its research was conducted in both Prague and Vienna (see Steinach, "Geschlechtstrieb," 551).

⁵¹ "Steinach, Eugen (27.01.1861-13.05.1944; Physiologie)," Senat S 304.1229, Archiv der Universität Wien, Austria.

⁵² "Der Sexualforscher Eugen Steinach," [1940], copyright IMAGNO/Austrian Archives, Mediennummer 00244490, https://austria-forum.org/af/Bilder_und_Videos/Historische_Bilder



Figure 2.3: The Biological Research Institute in the Prater, Vienna⁵³

Perhaps owing to the remarkable and radical character of the research being conducted there, the Biological Research Institute gained an outsized reputation in the early part of the twentieth century. Founded in 1903 by wealthy biologists, the Institute, or “Vivarium” (as the Viennese referred to it), was located in a former animal house in Vienna’s Prater amusement

[IMAGNO/Medizin/00244490](#). Note that although the archive dates this photo to 1940, it also lists the location as Austria. Since Steinach left Austria after 1938, I suspect that the photo was actually taken earlier.

⁵³ Erich Smeikal, Front view of the BVA building in the Prater, in Klaus Taschwer et al., *Experimental Biology in the Vienna Prater: On the History of the Institute for Experimental Biology 1902 to 1945* (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2016). The original copy is located in the Picture Archives of the Austrian National Library, 430.152-B.

park; in photographs of the building, the Riesenrad Ferris wheel often occupies the background (see fig. 2.3).⁵⁴ As Chandak Sengoopta reports, the Institute eschewed “traditional descriptive and comparative modes of biological research... in favor of invasive, innovative experimentation.”⁵⁵ Under this methodology, and with the aim of being able to infer what causes ‘normal’ biological processes to occur, researchers would conduct experiments that radically altered the physiology of test animals. This was certainly true of Steinach’s organ transplantation research, which can sometimes seem like the work of a mad scientist; it also characterizes the work of the Vivarium’s most notable researcher, Paul Kammerer. In his biography of Kammerer, the novelist Arthur Koestler wrote that other biologists of the time referred to the Vivarium as the “Sorcerer’s Institute,” and this seems wholly appropriate.⁵⁶

In “Sexual instinct,” the 1910 article that returned him to the field of sexual physiology, Steinach revisited the ground plowed previously in his critique of Tarkhanov. In that 1894 article, published when solidism still reigned (albeit tenuously) over physiology, Steinach was unable to establish *how* testicles affected his test animals; all that he could do was to vaguely pronounce their importance. Sixteen years later, however, endocrinology, and the neo-humoralism that underlay it, had opened up new and productive avenues of research, particularly with respect to the ovaries. The idea that certain organs, including both types of gonads, secrete chemicals directly into the blood was no longer in scientific dispute. Even the title of Steinach’s 1910 article, which refers to the “inner-secreting function of the gonads,” indicates the shift in

⁵⁴ Benjamin, “Eugen Steinach, 1861–1944,” 431.

⁵⁵ Sengoopta, *Quintessence of Life*, 58.

⁵⁶ Arthur Koestler, *The Case of the Midwife Toad* (1971; Random House, 1972), 22. For more on the Vivarium, see the recent, though short, history of the Institute by Taschwer et al., *Experimental Biology in the Vienna Prater*.

direction: this was an essay about the chemical, non-germinal products of the ovaries. Returning once more to the grasping instinct of rutting frogs, Steinach began by showing that during the months when a frog is not in heat, the grasping instinct is inhibited by nerve signals to the muscles.⁵⁷ He then reasoned that if the testicles are instrumental in the appearance of the grasping reflex, then perhaps they supply a chemical that removes the inhibition of that reflex. After further experimentation, Steinach discovered that he could induce the grasping reflex in castrated frogs by injecting them with testicular extract. The injection was successful in 88% of his test cases, usually triggering the reflex within twelve to twenty-four hours, and peaking at forty-eight hours. With “Impotente” subjects (male frogs who never developed the grasping reflex owing to natural causes), the effect was even more pronounced.⁵⁸

Steinach was keen to emphasize that the effect of his injections occurred rapidly and on demand. “*Of particular importance,*” he wrote, “*is the elective and rapid occurrence of the effect.*”⁵⁹ Here we see an example of an idea that occurs frequently in Steinach’s work, namely the possibility of inducing a specific physiological effect at will. In keeping with the general emphasis of the Biological Research Institute, Steinach saw such arbitrary and voluntary inductions as critical for advancing physiological knowledge, because they seemed to offer more conclusive evidence for the causation of an effect. Such a view is illustrative of the newly plastic understanding of the body that endocrinology encouraged. The old solidistic paradigm had emphasized physiological stability, but in this new perspective the body became a transformable entity. The assumption of (solidistic) stability gave way to an assumption of (neo-humoral)

⁵⁷ Steinach, “Geschlechtstrieb,” 555.

⁵⁸ Ibid., 558. The significance of Steinach’s term “Impotente” will be discussed below.

⁵⁹ Ibid., 557. “*Von besonderer Bedeutung ist das elektive und rasche Auftreten der Wirkung.*”

chemical balances that determine ‘normal’ functionality; but where there are balances, there are also potential imbalances, which might have far-ranging effects on an organism, and which could in theory be manipulated artificially by a scientist or doctor through the careful administration of the proper chemical substances.

Such delight in the biological malleability of his test subjects certainly characterizes the second half of Steinach’s 1910 experiment, in which, working with rats, he attempted to “experimentally produce intermediaries in the development of masculinity.”⁶⁰ Building on his discovery sixteen years previously that castrating rats *prior* to puberty inhibits the sexual instinct, while castrating them *after* puberty does not, Steinach decided to test the degree to which blood-born secretions from the testicles are responsible for sexual development. He devised a technique of “autoplastic” testicle transplantation, whereby male rats castrated shortly after birth had their testicles immediately re-implanted in their abdominal wall.⁶¹ This autoplastic transplantation meant that the testicles were removed from the reproductive system while remaining connected to the circulatory system; in other words, this technique terminated the germinal function of the testicles while allowing the endocrine function to continue unabated. After a few months, Steinach discovered that the prostates and seminal vesicles of rats with self-transplanted testicles had developed to a size comparable to those of “normal” male rats (i.e., those whose testicles had not been moved); in rats without testicles in any location, however, the prostate and the seminal

⁶⁰ Ibid., 565. “Da sich demnach durch die Transplantationsmethode auch Zwischenstufen in der Entwicklung der Männlichkeit experimentell erzeugen lassen...” Incidentally, it may well be thanks to Steinach that the rat has become so ubiquitously associated with laboratory research. In *Sex and Life* Steinach takes a few paragraphs to extoll the virtues of the rat for laboratory research, thank the species for its contribution to science, and offhandedly take credit for “introducing” the rat “into experimental technique” (Steinach, *Sex and Life*, 16). In Sengoopta’s estimation, this claim is “not without justification” (Sengoopta, *Quintessence of Life*, 239n141).

⁶¹ Steinach, “Geschlechtstrieb,” 561.

vesicles atrophied. This result indicated a link between the presence of testicles and the development of other sexual organs, regardless of whether the testicles are physiologically connected to the reproductive system. This implied, first, that the testicles secrete some sort of chemical substance into the bloodstream that can control aspects of the other sexual organs; and second, that there are degrees of gradation in the sexual biology of an organism. As Steinach put it in the title of this section of the article, it is the endocrine function of the testicles that allows for the development of “full masculinity.”⁶² Years later, when reflecting upon this experiment, Steinach extended its implications to humans, predicting that “the functional inactivity of” the gonads would “prevent a man from being a complete man, a woman from being a full-grown woman.”⁶³

Steinach’s 1910 experiment with autoplasmic transplantation provided his first experimental evidence of a sexual spectrum. Of course, the idea of “full masculinity” by itself *implies* that there are non-full masculinities, but his reference to his self-transplanted rats as “intermediaries in the development of masculinity” *directly indicates* that he had already begun to think consciously in such terms. But it was Steinach’s next major project, which involved his famous guinea pig experiments, that would provide the most compelling argument for the existence of a sexual spectrum.

Transforming Guinea Pigs

In a series of articles published between 1912 and 1920, Steinach demonstrated the remarkable extent to which the sexed mammalian body exists as a product of internal, chemical secretions

⁶² Ibid., 560.

⁶³ Steinach, *Sex and Life*, 46.

from the gonads.⁶⁴ This research, operating on the same “infantile castrate” principle of his previous work with rats, began by taking several male and female guinea pigs and removing their gonads shortly after birth.⁶⁵ Then, some of the guinea pigs that had been born male were implanted with ovaries, while some of those born female were implanted with testicles; and an additional group of males and females were left without any gonads at all.

Steinach explained that he had decided upon this radical experiment after his previous research had indicated that male sexual development is independent of the nerves and is governed solely by the secretions of the testes.⁶⁶ His autoplasmic rats had grown “to full masculinity and represent[ed] themselves in their complete appearance and capability [Mächtigkeit] as normal males.”⁶⁷ Upon histological examination of their transplanted testicles,

⁶⁴ Eugen Steinach, “Willkürliche Umwandlung von Säugetier-Männchen in Tiere mit ausgeprägt weiblichen Geschlechtscharakteren und weiblicher Psyche,” *Pflügers Archiv für die gesammte Physiologie des Menschen und der Thiere* 144 (1912): 72–108; “Feminierung von Männchen und Maskulierung von Weibchen,” *Zentralblatt für Physiologie* 27, no. 14 (October 4, 1913): 717–23; “Pubertätsdrüsen und Zwitterbildung,” *Archiv für Entwicklungsmechanik der Organismen* 42 (1916): 307–32; Eugen Steinach and Guido Holzknacht, “Erhöhte Wirkungen der inneren Sekretion bei Hypertrophie der Pubertätsdrüsen,” *Archiv für Entwicklungsmechanik* 42 (1916): 490–507; and Eugen Steinach, “Künstliche und natürliche Zwitterdrüsen und ihre analogen Wirkungen,” *Archiv für Entwicklungsmechanik der Organismen* 46, no. 4 (July 20, 1920): 12–28.

⁶⁵ Steinach initially performed some of these experiments on rats (see Steinach, “Willkürliche Umwandlung”), but he quickly decided to switch to guinea pigs, because they exhibit a much greater degree of sexual dimorphism (Steinach, *Sex and Life*, 62).

⁶⁶ Almost a decade prior to the publication of Steinach’s first guinea pig experiment, Otto Weininger proposed a remarkably similar experiment in *Sex and Character*. Notably, Weininger shared Steinach’s conception of sex as a spectrum, and as determining gender; but he did not believe sex to be malleable. I know of no references to Weininger in Steinach’s work, and thus am unable to say whether or not Steinach got the idea from him. *Sex and Character: An Investigation of Fundamental Principles*, trans. Ladislaus Löb (Vienna: Wilhelm Braumüller, 1903; Bloomington: Indiana University Press, 2005), 22–23. On Weininger, see chapter 1 of this dissertation; for discussions of related confluences between Weininger’s thought and Steinach’s, see chapter 1, note 36, and chapter 3, note 112.

⁶⁷ Steinach, “Willkürliche Umwandlung,” 72. “Die Tiere... sind zu voller Männlichkeit herangewachsen und repräsentieren sich in ihrer ganzen Erscheinung und Mächtigkeit als

he had discovered that while the germinal cells of the testicles had atrophied, the interstitial cells had proliferated. Steinach was convinced that these cells constitute the source of testicular hormone, and he proposed that, henceforth, the old term “gonad” (*Keimdrüse*; lit.: ‘germinal gland’) ought to be used to refer to the ovaries and testicles only when discussing their gamete-producing function; when discussing their hormone-producing function, his new term “puberty gland” (*Pubertätdrüse*) ought to be used instead.⁶⁸

With this new term, Steinach signaled the completion of a shift towards an endocrinological understanding of sex. This shift had major implications. As in his previous work, Steinach argued on the basis of his findings that the sex of an organism is determined by chemicals secreted by the puberty glands—these new experiments allowed the extent of that determination to go much further. To quote the title of his first article on guinea pig transplants, Steinach now claimed to be able to effect an “intentional transformation” (*willkürliche Umwandlung*) of the sex of his research animals.

As the first major research question of the “Intentional transformation” project, Steinach asked: do puberty glands have the ability to affect both “homologous” and “heterologous” sexual tendencies in an organism, or do they only affect homologous “potentials” (*Anlagen*)?⁶⁹

normale Männchen.” Here it should be noted that the German word that *repräsentieren* carries a valence of standing in the place of something else. In other words, the visual and behavioral masculinity of the rats replaced something—possibly a state of androgyny that Steinach may have expected.

⁶⁸ Ibid., 75. Within a year, Steinach felt confident enough to open a subsequent article by declaring: “I may assume it is known that in the gonads there are two different tissues with totally disparate functions” (“Daß in den Keimdrüsen zweierlei Drüsengewebe mit total verschiedener Funktion vereinigt sind, darf ich als bekannt voraussetzen”). Steinach, “Feminierung,” 717–18.

⁶⁹ Steinach used the terms *heterologous* and *homologous* to indicate secondary sexual characteristics that correspond (*homologous*) and do not correspond (*heterologous*) to the sex of puberty gland in question. For example, in human beings, facial hair is a *heterologous* characteristic with respect to the ovary, while lactation is a *homologous* characteristic. The term

Answering this question required a determination of whether the endocrine operations of the testes and ovaries are identical. If it were the case that they function identically, then one would expect a male animal implanted with ovaries to still develop male characteristics and a female animal implanted with testicles to still develop female characteristics. In this scenario, testes and ovaries would provide (as it were) the ‘fuel’ but not the ‘direction’ for sexual development. However, if it were the case that testicles and ovaries have different endocrine functions, then one would expect a given gland to develop only homologous characteristics, and not heterologous characteristics. In this second scenario, it would need to be further ascertained if the influence of the puberty gland merely promotes the growth of already extant *Anlagen*, or if it can also transform *Anlagen* that were previously undifferentiated—providing both the ‘fuel’ and the ‘direction’ for sexual development. Ultimately, Steinach wanted to know “whether it would be possible, through disconnecting male and attaching female puberty glands, to convert [*umwandeln*] young males into animals with entirely female sexual characteristics and with female psyches.”⁷⁰ Later, he would ask the same question of female guinea pigs from the other side of the binary.

The dramatic results of these experiments were that the guinea pigs tended to develop the secondary sexual characteristics associated with the puberty glands physically present in the animal in question. Guinea pigs born female who now possessed transplanted testes grew to a size expected of male guinea pigs, developed the rough hair of males, and did not develop

Anlage is very difficult to translate, but in this context it can be thought of as a sort of sexual substrate that becomes fixed during fetal development, and that is then further developed by the puberty glands. For example, a female animal would have a female *Anlage* that the ovary would normally develop into female characteristics.

⁷⁰ Steinach, “Willkürliche Umwandlung,” 77. “...ob es möglich wäre, junge Männchen durch Ausschaltung der männlichen und Einschaltung der weiblichen Pubertätsdrüsen in Tiere mit vollkommen weiblichen Geschlechtscharakteren und mit weiblicher Psyche umzuwandeln.”

mammary tissue to any significant extent. They also experienced a remarkable growth in the size of their clitorises. Correspondingly, the guinea pigs born male who now possessed ovaries grew to a smaller body size, developed smoother hair in their coats, and experienced such a development of the mammary tissues “that milk could be expressed through the nipples.”⁷¹ As for the guinea pigs who remained without puberty glands of either variety, they tended to grow to intermediary sizes, but resembled to a greater degree the control animals of their birth sex (see figs. 2.4–2.8). To describe the effects of his experiment, Steinach coined the terms “masculization” (*Maskulierung*) and “feminization” (*Feminierung*), which he defined as “transformation” (*Umwandlung*) of “sexual characteristics and... psyches.”⁷²

As this last quotation indicates, the animals did not merely come to resemble their sexual ‘opposites’ in a physiological manner, they also began to exhibit behaviors associated with the other sex; “A *psychosexual transformation* [Wandlung] took place parallel with the somatic one.”⁷³ Feminized males, in addition to lactating from their developed mammaries, also allowed infantile guinea pigs to nurse at their teats, and in general “care[d] for the pup[s] after the manner of a real mother.”⁷⁴ The guinea pig infants, for their part, showed no indication that they

⁷¹ Steinach, *Sex and Life*, 64.

⁷² Steinach, “Feminierung,” 719. “Masculization,” although awkward to my ears, is the translation of *Maskulierung* that was used in Steinach’s English-language publications, and therefore may be the translation that Steinach preferred. Preliminary research indicates that Steinach may have been the first to use these terms in print. A Google Ngram search for the terms “Feminierung” and “Maskulierung” reveals no results until the 1910s, with both terms peaking in popularity around 1920. https://books.google.com/ngrams/graph?content=Feminierung%2CMaskulierung&year_start=1800&year_end=2000&corpus=20&smoothing=3&share=&direct_url=t1%3B%2CFeminierung%3B%2Cc0%3B.t1%3B%2CMaskulierung%3B%2Cc0, accessed June 19, 2018.

⁷³ *Ibid.*, 722. “Parallel mit der somatischen vollzieht sich die *psychosexuelle Wandlung*.”

⁷⁴ Steinach and Holzknacht, “Erhöhte Wirkungen,” 498. “Junge... nach Art wirklicher Mütter zu betreuen.”

regarded the feminized male as being in any way different from a “normal” female (see fig. 2.8).⁷⁵ Masculized females, on the other hand, “*obtained distinctly male sexual instinct, and could distinguish immediately between a rutting and a non-rutting female*” when placed next to both. And upon identifying a rutting female, the masculized female would “*incessantly pursue her, passionately court her, and spring upon her.*”⁷⁶



Figure 2.4: Feminization series (guinea pigs). Left to right: normal brother, feminized brother, normal sister, castrated brother



Figure 2.5: Masculization Series (guinea pigs). Left to right: masculinized sister, castrated sister, normal sister, normal brother

⁷⁵ Steinach, “Feminierung,” 721.

⁷⁶ Ibid., 722. “*Die maskulierten Weibchen erhalten ausgeprägt männlichen Sexualtrieb, sie unterscheiden sofort ein nichtbrünstiges von einem brünstigen Weibchen. Sobald sie ein solches agnoszieren, verfolgen sie es unaufhörlich, umwerben es leidenschaftlich und springen auf.*”

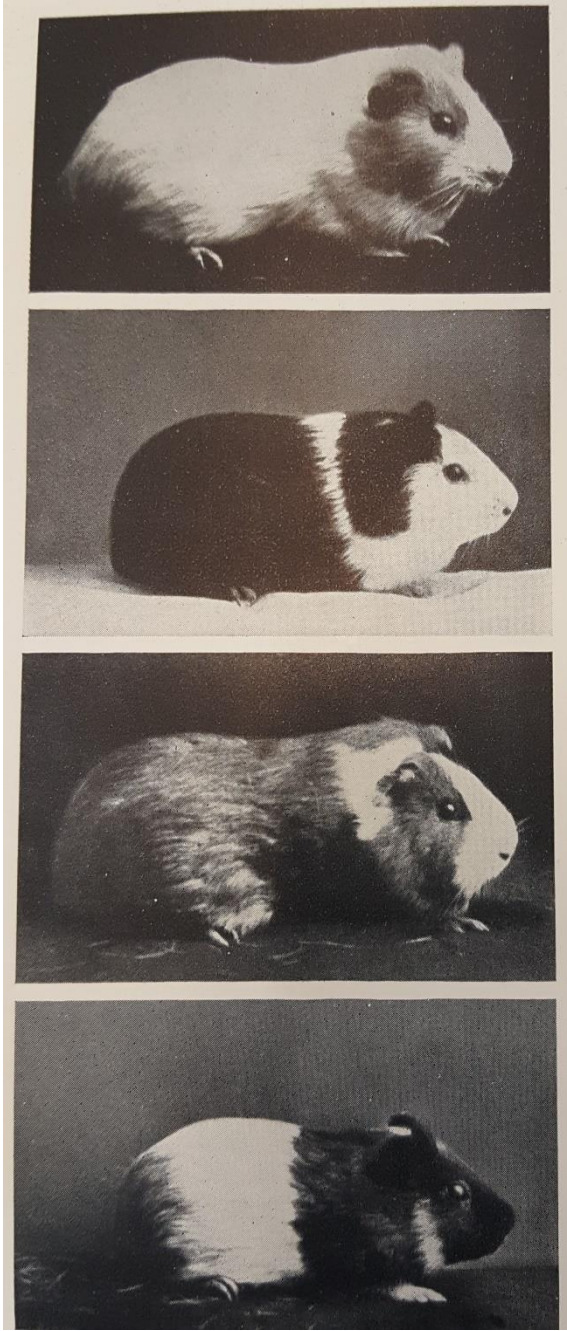


Figure 2.6: Feminization Series (guinea pigs). From top to bottom: normal brother, normal sister, castrated brother, feminized sister

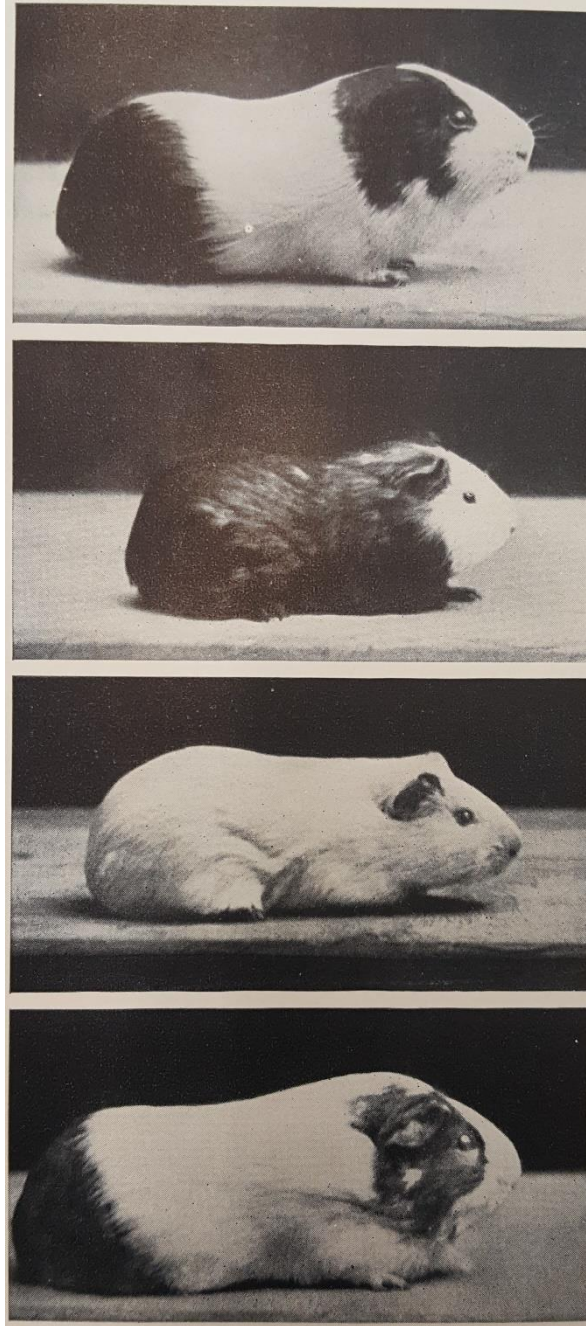


Figure 2.7: Masculization Series (guinea pigs). From top to bottom: normal brother, normal sister, castrated sister, masculinized sister

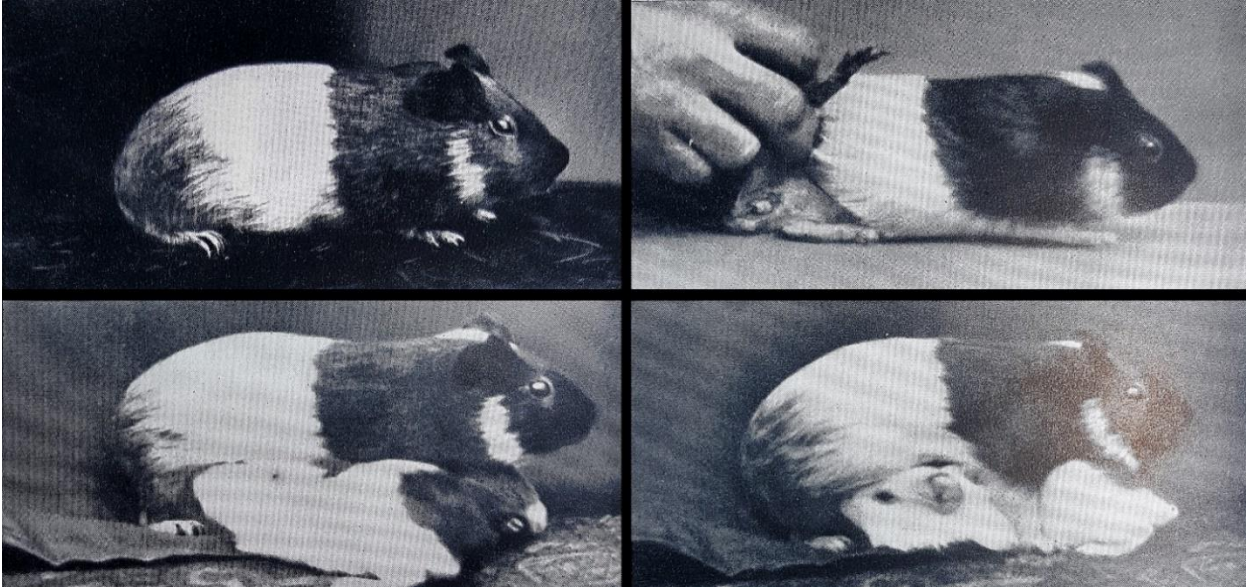


Figure 2.8: A nursing feminized male guinea pig. Clockwise from top left: full profile of the animal; demonstration of its (undeveloped) male genitalia; nursing a guinea-pig pup; nursing two pups⁷⁷

Steinach's Sexual Spectrum

It was in the guinea pig series of articles that Steinach's conception of sex became fully spectral. Although these articles (unsurprisingly) contain no treatises on the definition of sex, the language that Steinach used indicates the extent to which he had by this point abandoned the Enlightenment conception of sex. As Laqueur and others have argued, the dominant understanding of sex at this time—which, to a great extent, still reigns today—was static (that is, unalterable) and binary.⁷⁸ Both these attributes were critical. It was not merely that *male* and *female* were the only possible designations; they were also regarded as opposites, as different as

⁷⁷ All photos of guinea pigs and the accompanying captions come from Steinach, *Sex and Life*, between 62 and 63.

⁷⁸ Laqueur, *Making Sex*. Gender and queer theorists have written a lot on the subject of binary modes of thinking about sex, gender, and sexuality. See, for example, Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity*, 2nd ed. (1990; New York: Routledge, 1999); and Eve Kosofsky Sedgwick, *Epistemology of the Closet*, 2nd ed. (Berkeley: University of California Press, 1990). See also Alice Domurat Dreger, *Hermaphrodites and the Medical Invention of Sex* (Cambridge, MA: Harvard University Press, 1998).

black and white and as incommensurable as oil and water. Steinach's research challenged the dominant sexual conception on both fronts.

Throughout these articles, Steinach used the language of transformation to describe his experiment. The sexual characteristics of his test animals were “converted” (*umwandeln*), “retuned” (*umstimmen*), “transformed” (*transformieren*), and “metamorphosed” (*wandeln*) into those of a different sex.⁷⁹ Steinach tended in these years (the 1910s) to hedge by claiming to have transformed (for example) a male guinea pig into an “animal with pronounced female sexual characteristics,” rather than to have outright transformed the sex itself. However, he occasionally approached the greater claim, as when he wrote that “The retuning [*umstimmende*] power of the female puberty gland has made the original male into a female in appearance and essence, into a nursing, affectionate, caring mother.”⁸⁰ Years later, when summarizing this research in his intellectual autobiography, the hedging mostly disappeared. There he stated plainly that “the implantation of the gonad of the opposite sex transforms the original sex of the animal.”⁸¹ Or, even more directly: “This experiment had converted males into females.”⁸² Note also that Steinach's word *Wandlung*, which I have translated as ‘metamorphosis,’ also possesses a religious valence: it is one of the German words for transubstantiation. This gives the implication that, like the Christian God, Steinach possessed the power to alter the fundamental attributes of

⁷⁹ “Umwandeln” was Steinach's preferred verb by a good margin, and examples of him using it may be found throughout these articles. Examples of the other three may be seen, respectively, at “Willkürliche Umwandlung,” 76; 104; “Erhöhte Wirkungen,” 491.

⁸⁰ Steinach, “Feminierung,” 721. “Die umstimmende Kraft der weiblichen Pubertätsdrüsen hat aus dem ursprünglichen Männchen im Äußeren und im Wesen ein Weibchen, eine säugende, liebevoll sorgende Mutter gemacht.”

⁸¹ Steinach, *Sex and Life*, 66.

⁸² *Ibid.*, 65.

the body. But where God needs a priest, Steinach needed only a scalpel and suture. (Clearly, the quasi-mystical character of Brown-Séguard's endocrinology had not entirely disappeared.)

Steinach's claimed ability to transform females into males (and *vice versa*) in every respect except for reproductive capacity marked a dramatic departure from the contemporary epistemological incommensurability of male and female—to say nothing of the general plasticity it implied about the body.⁸³ However, it did not, in and of itself, constitute a challenge to the *binary* character of the dominant sexual conception. After all, no matter how radical it may be to change a female into a male, there are still only two sexes in the picture. However, Steinach's work from this period also introduces the idea of sexual intermediaries, and it is there that we find him pushing back against the sexual binary. At times, Steinach introduced such ideas directly, as when he referred to his autoplasmic rats as “intermediaries in the development of masculinity.” Much more evidence, however, can be found between the lines. Frequently, Steinach used spatial metaphors to describe the sexual development of his test subjects, as when he declared the fur of his feminized guinea pigs to have experienced “A distinct metamorphosis in a feminine direction.”⁸⁴ As I argued in the previous chapter, the very idea of ‘moving’ in a masculine or feminine direction heavily implies the existence of intermediary sexual positions between ‘male’ and ‘female.’ Under a binary conception of sex, which by definition contains only two positions, such an expression would be almost meaningless. The aesthetics of binary structures would obligate one to use a different vocabulary (such as the language of transformation).

⁸³ On epistemes, see Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences*, Vintage Books ed. (Paris: Editions Gallimard, 1966; New York: Random House, 1994).

⁸⁴ Steinach, “Feminierung,” 720. “Eine ausgeprägte Wandlung in weiblicher Richtung.”

As with Steinach's challenges to the inalterability of sex, his challenges to the binary character of the dominant sexual conception became more pointed and direct in his later autobiography. "Perfect specimens of one single sex are in reality theoretical ideals," he wrote; "a complete man is as non-existent as a complete woman." Moreover, "it is possible to detect in every man some, though possibly minute, traces of femininity, and in every woman some slight attributes of masculinity. ... Between a real man and a real woman there are innumerable others, some significantly characterized as belonging to the 'intermediate sex.'"⁸⁵ From this perspective, Steinach's 'hedging' referred to above might now take on a slightly more radical character, as such hedges implicitly suggest the possibility of non-binary sex, even if they vacillate with respect to the question of whether sex was truly alterable.

It is worth pausing to note how remarkable these claims were for their time. (Or even for today, for that matter.) The conception of sex as a static binary was deeply ingrained in the culture of early-twentieth-century Europe. Anything that threatened the persistence of that conception—such as homosexuality—tended to get reinterpreted in such a manner as to prop it up instead. This can be seen, for example, in the late-nineteenth- and early-twentieth-century medical category of pseudohermaphrodites. Such people *appeared* to be of both sexes, because they possessed indeterminate genitalia or other unusual combinations of sexual characteristics. However, medical doctors regarded pseudohermaphrodites as having 'in reality' only one sex, hidden away inside the body, which could be discovered through determining whether a person possesses ovaries or testicles.⁸⁶ The idea of someone who belongs to both sexes, or some sort of

⁸⁵ Steinach, *Sex and Life*, 87–88.

⁸⁶ See Alice Domurat Dreger, "Hermaphrodites in Love: The Truth of the Gonads," in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1996), 46–66. An extended version of this article appears as chapter four of her book, *Hermaphrodites and the Medical Invention of Sex*.

intermediary sex, was threatening to the prevailing binary conception of sex, and doctors did all they could to be able to categorize such individuals as either male or female.

Indeed, Steinach himself linked his research to concerns about pseudohermaphrodites, although he did so from a different perspective than that of the French and British medical doctors whom Dreger describes. Steinach argued that the fact that cases of “so-called pseudohermaphroditism” were “relatively rare” provided evidence for his gonadal theory.⁸⁷ If it were the case that the puberty glands of testicles and ovaries function identically, then one would expect that our glands would routinely develop embryonic sexual *Anlagen* “in both directions,” and that hermaphrodites would thus be the rule, rather than the exception. But if the male and female puberty glands work differently (as Steinach’s experiments indicated) then hermaphroditism ought to be seldom seen—which is in fact the case. Steinach speculated instead that the ‘condition’ of hermaphroditism may be the result of incomplete embryonic gonadal differentiation, resulting in a puberty gland that would have the ability to activate the *Anlagen* of both sexes.⁸⁸

Whether Steinach provided an accurate explanation (by the standards of today’s medical science) for the etiology of intersexuality is not the critical point here.⁸⁹ Rather, what’s important

⁸⁷ Steinach, “Willkürliche Umwandlung,” 85.

⁸⁸ *Ibid.*, 85–86; see also 105–106. According to embryological knowledge at the time, an animal begins life as a sexually undifferentiated organism that then becomes sexed during fetal development. In Steinach’s terminology, that would mean that a fetus in the early stages of its development has *Anlagen* for both sexes. Under normal circumstances, Steinach thought, one set of *Anlagen* would be discarded when the fetus becomes sexed, but he speculated that this may not happen in the case of hermaphrodites.

⁸⁹ For the record, Steinach wasn’t too far off the mark in a certain sense, as some forms of intersexuality (such as those caused by androgen insensitivity syndrome) do arise in the process of embryological development. However, Steinach’s supposition is hampered by a lack of knowledge of the role of chromosomes and genes in sexual differentiation.

is that he took the issue of pseudohermaphroditism, which at the time usually served to preserve the sexual binary, and instead presented the ‘condition’ as a rare but explicable example of an intermediary sex. Further, by declaring his own ability to create “experimental hermaphrodites,” he pushed back at the same time against both the static and the binary characters of the dominant sexual conception.⁹⁰

Given all of the above evidence, it seems clear that Steinach conceived of sex in the 1910s (and even more so in his later years) as a spectrum rather than as a binary. But what was the character of that spectrum? At first glance it may appear that he conceived of sex as a simple spectrum from ‘male’ to ‘female.’ The more male gonadal hormone an organism possesses, the more masculine it is; the more female gonadal hormone an organism possesses, the more feminine it is. Such would certainly be the apparent implication of statements such as those above, where animals are developed in male or female directions. But consider statements such as this: “*The masculine secondary organs [of feminized males] remain still composed of the infantile matter, as with ordinary infantile castrates [Frühkastraten]. ... this means that each puberty gland grows and develops only the homologous characteristics.*”⁹¹ If Steinach conceived of sex as a simple spectrum, shouldn’t he have expected that the pre-existing male sex organs of feminized males would deteriorate, rather than just remain rudimentary? Similarly, his comments about hermaphrodites, whose *Anlagen* develop in *both* directions, cannot be easily reconciled with the existence of a simple, one-attribute spectrum. Instead, I propose that Steinach’s

⁹⁰ See Steinach, “Pubertätsdrüsen und Zwitterbildung”; and Steinach, “Zwitterdrüsen.”

⁹¹ Steinach, “Willkürliche Umwandlung,” 85. “*Die männlichen sekundären Organe bleiben auf der infantilen Stufe stehen wie bei gewöhnlichen Frühkastraten. ... d.h. dass jede Pubertätsdrüse nur die homologen Merkmale zum Wachstum und zur Ausbildung bringt.*”

conception of sex in the 1910s can best be understood by framing it as a *dual*-spectrum, with masculinity and femininity as quasi-independent variables.

In this dual-spectrum conception, certain aspects of a given organism are affected by male hormones, and other aspects are affected by female hormones. Typical female mammals (including human females) are characterized by a high level of femininity (here conceived of mostly, but not exclusively, in hormonal terms) and a low (but non-zero) level of masculinity.⁹² The opposite is the case for typical males. Castrated or spayed animals have low levels of both femininity and masculinity, while hermaphrodites have high levels of both qualities.⁹³ (For a diagram of this dual-spectrum, see fig. 2.9.)

⁹² Owing to embryonic intersexuality, organisms would still possess some small quantity of the ‘opposite’ sexual quality in this dual-spectrum system. Note that in the 1910s it was not yet known that both gonad types produce both testosterone and estrogen, as well as other ‘male’ and ‘female’ hormones.

⁹³ As Nelly Oudshoorn reports, an understanding of masculinity and femininity as quasi-independent variables (which she refers to as “relative sexual specificity”) became quite commonplace among sex endocrinologists by the late 1930s. However, as Steinach’s publications from the 1910s indicate, he had arrived at such a conception of sex two decades earlier. Oudshoorn, for her part, does not examine Steinach or his writings, except for a brief footnote reference. Nelly Oudshoorn, “Endocrinologists and the Conceptualization of Sex, 1920–1940,” *Journal of the History of Biology* 23, no. 2 (Summer 1990): 163–86.

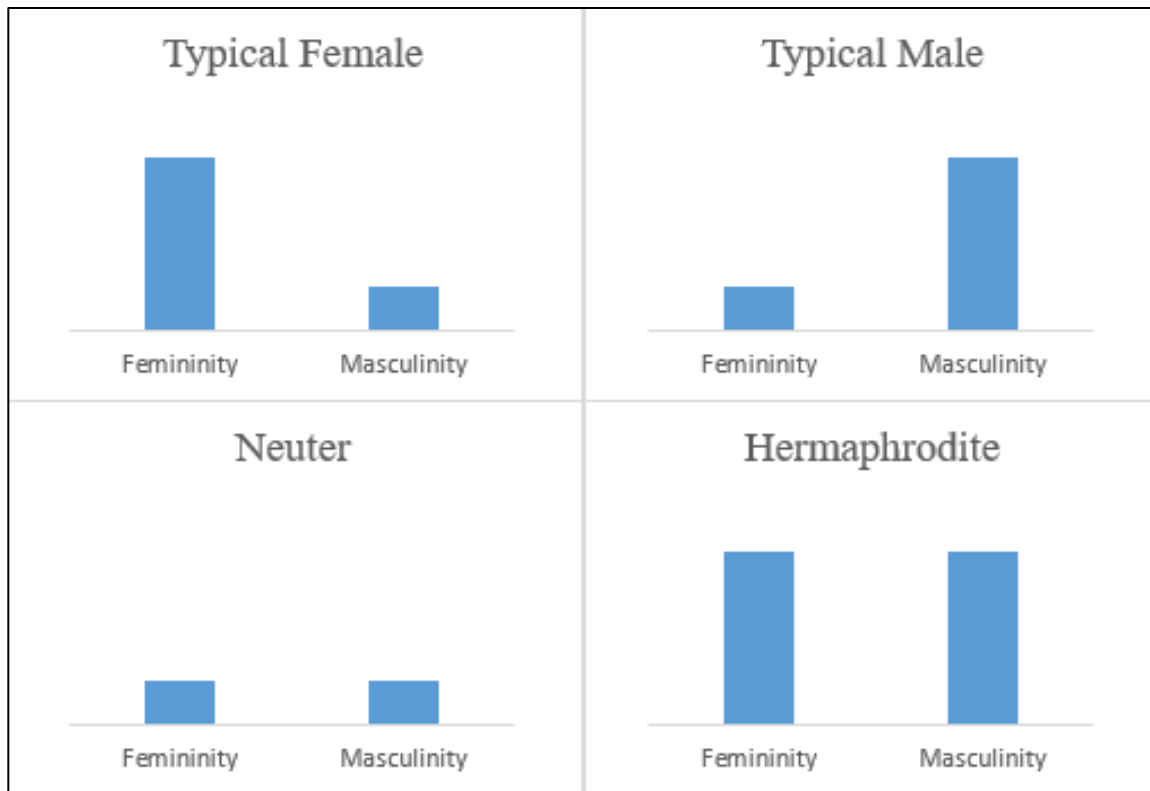


Figure 2.9: A diagram of Steinach's sexual spectrum

For Steinach's guinea pigs, the process of gonadal transplantation would lower one quantity while raising the other. Feminized males would see their masculinity drop—although not all the way to the level of a typical female—and their femininity rise. The opposite, of course, would be true for masculinized females. Intriguingly, however, some of Steinach's observations indicate that he regarded his transplanted guinea pigs as being *more* masculine or feminine than a “normal” individual of that sex. This was particularly the case for feminized males. Following a successful implantation, Steinach observed that the female puberty gland, “in order to resist the onslaught of its new environment,” would “grow and proliferate so richly, that its *efficacy* would be *increased*, and after a fashion an accentuation, a *concentration of feminine sexual characteristics* came about.”⁹⁴ This resulted in a sort of hyper-feminization, characterized

⁹⁴ Steinach, “Feminierung,” 721. “...um sich der Angriffe der neuen Umgebung zu erwehren, so wächst und wuchert die weibliche *Pubertätsdrüse* so reichlich, daß ihre *Wirksamkeit verstärkt*

by a hyperplasia of the mammary tissue, constant lactation, and other attributes typically seen in ‘normal’ females during and shortly after pregnancy. Moreover, “The masculine body growth was so strongly inhibited, that *the feminized males became even smaller than their normal sisters.*”⁹⁵

Steinach speculated that this hyper-sexualization could be explained by the proliferation of the interstitial cells within transplanted gonads, which he had observed not only with his guinea pigs, but also in his earlier work with rats. He suspected that sterilizing a gonad would create room for a proliferation of the hormone-producing interstitial cells, thus boosting the supply of gonadal hormones to the blood. This suspicion would provide Steinach with the seed for his later experiments with vasoligation and ‘rejuvenation,’ but it would not have been possible at all if he were not conceiving of sex as a spectrum.

Gender Patterns in Steinach’s Thinking

As I have argued above, Steinach’s research in the 1910s, though couched in the innocuous language of science, presented a radical challenge to the dominant conception of sex in Europe at this time. What went mostly unopposed in his work, however, was the dominant conception of *gender* current to his time. As previously noted, in addition to “physical sexual characteristics,” Steinach also conducted observation of the “psychic sexual characteristics” of his test subjects. In his work with rats, Steinach noted the generally similar behavior of what he referred to as the “normals”—the rats with testicles, regardless of location—when compared to the “castrates,”

wird und gewissermaßen eine Verschärfung, eine *Konzentration der weiblichen Geschlechtscharaktere* zustandekommt.”

⁹⁵ Ibid., 721. “Das männliche Körperwachstum wird so stark gehemmt, daß *die feminierten Männchen noch kleiner werden als ihre normalen Schwestern.*”

who had no testicles at all.⁹⁶ In his interpretation, this data implied a correlation between the chemical secretions of the testicles and the behavior of the organism, namely, that having more masculine hormone causes an animal to act in a more ‘masculine’ manner.

The way that Steinach related his findings here reveals much about his intellectual precommitments. In one instance, he began with a mostly-neutral description of the castrates having a reduced (but still present) ability to track and smell a female rat in heat. However, he quickly moved to distinctly gendered and non-scientific language. For the castrate, Steinach wrote, “*every element of violence and persistence in the drive is missing; the activity—the ability to get an erection and copulate—is missing. With the normal male, however, it is well known that the stormy desire and hunting of the female in heat, the brash and boundless repetition of the act, forms the signature of sexual lust.*”⁹⁷ Here Steinach ascribed human-like emotions and motivations on to his rat test subjects, projecting human gender constructs onto non-human organisms.

When discussing the results of his guinea pig experiments, Steinach went even further. He frequently referred to his test animals’ penises as “powerful” (*kräftig*) and “mighty” (*mächtig*).⁹⁸ The penises of castrated animals, however, were “limited and tightly circumscribed.”⁹⁹ He described his feminized males as “exhibit[ing] a willingness to carry out the nursing function,” using their now-lactating breasts, “with the same care, devotion, and

⁹⁶ Steinach, “Geschlechtstrieb,” 562.

⁹⁷ Ibid., 562. “...es fehlt jede Heftigkeit und Ausdauer des Triebes, es fehlt die Betätigung—die Erektionsfähigkeit und Begattung. Bei den normalen Männchen hingegen bildet bekanntlich gerade das stürmische Verlangen und Jagen nach dem brünstigen Weibchen, die ungestüme und maßlose Wiederholung des Aktes die Signatur der Geschlechtslust.”

⁹⁸ See, for example, Steinach, “Willkürliche Umwandlung,” 84.

⁹⁹ Ibid., 87. “beschränkte und engbegrenzte.”

patience which are natural for a normal female.”¹⁰⁰ To be sure, it was a matter of significant scientific interest that his feminized males exhibited nursing behavior; but one wonders exactly how Steinach came to scientific knowledge of the animals’ care and devotion. Similarly, he wrote that, when placed near an adult “normal male,” the feminized male “does not repulse the attentions of the visitor with masculine courage and pugnacity, but on the contrary shows feminine shyness and fear.”¹⁰¹ And then there’s this remarkable description of masculinized female guinea pigs:

The mature transplant-animals present a picture of fully distinctive masculinity. All the typical secondary sexual characteristics have developed—the male robust stature, the powerful skeleton, the mighty head, the coarse, rough male growth of hair, the accessory sexual glands (prostate and seminal vesicles), and the normally-shaped penis. And not only the physical attributes of masculinity, but also all the psychic and functional alterations that characterize the transition from immature to sexually mature occur in the appearance [of the animal]—masculine courage and temperament, the instinct toward the female, the capacity for erection and copulation. The circulating hormones have eroticized [*erotisiert*] the central nervous system in the normal way.¹⁰²

In these examples, Steinach’s easy transition from a scientific observation of behavior to a literary assumption of motivation reveals the extent to which concepts of gender structured his interpretation of his research data. Such a transition is best explained by the presence of a pre-

¹⁰⁰ Steinach, *Sex and Life*, 64.

¹⁰¹ *Ibid.*, 65.

¹⁰² Steinach, “Feminierung,” 718. “Die ausgewachsenen Transplantationstiere bieten das Bild voll ausgeprägter Männlichkeit. Alle typischen sekundären Geschlechtscharaktere sind zur Entfaltung gekommen—die männlich robuste Statur, das kräftige Skelett, der mächtige Kopf, der grobe rauhe männliche Haarwuchs, die akzessorischen Geschlechtsdrüsen Prostata und Samenblasen und das normal gestaltete männliche Glied. Aber nicht bloß die körperlichen Attribute der Männlichkeit, sondern auch alle psychischen und funktionellen Veränderungen, welche den Übergang vom unreifen zum geschlechtsreifen Individuum charakterisieren, treten in die Erscheinung—männlicher Mut und Temperament, der Trieb zum Weibchen, die Erektions- und Begattungsfähigkeit. Die zirkulierenden Hormone haben das zentrale Nervensystem in normaler Weise erotisiert.” Steinach coined the word *Erotisierung* to describe the transformative effects of gonadal hormones upon the body.

existing belief in the normality of a particular type of human gender behavior—namely, the human gender behavior of the early-twentieth century Viennese bourgeoisie—as a matter of universal biological fact.

Steinach's writing is also marked by a frequent overlap of sexual and gender categories, such that the observed *sexual* attributes of his animals deterministically predict *gender* attributes. Or, as he put it in a letter to his associate Harry Benjamin, "The libido (eroticization) is a psychic sexual characteristic."¹⁰³ In his experiments on the grasping instinct of frogs, Steinach recorded that he had particular success triggering the reflex in "Impotente" frogs—male frogs that (owing to natural causes) never developed the instinct. But note the specific way that he defined such frogs: "As *Impotente* I designate such animals as those in which the grasping instinct is wholly absent at the time when the great bulk of the reflex has already been triggered, and in which it does not occur later."¹⁰⁴ This is a highly unusual definition of impotence. Normally that word refers to being unable to have an erection or, occasionally, to infertility. But Steinach's *Impotente* frogs had neither of these issues; indeed, upon having their grasping instinct artificially induced, the supposedly impotent frogs successfully mated with females in thirty-two out of thirty-four cases. In other words, this is a definition of impotence that refers not to some biological or physiological deficiency, but rather to an absence of normal mating behavior. That Steinach seems to have had no difficulty in broadening the definition thusly indicates the extent to which gender and sex overlapped in his thinking. In other words, even as his research assumed

¹⁰³Eugen Steinach to Harry Benjamin, January 7, 1922, Box 1, NYAM. "Die Libido (Erotisierung) ist ein psych. Sexualcharakter."

¹⁰⁴Steinach, "Geschlechtstrieb," 558. "Als Impotente bezeichne ich kurz solche Tiere, bei welchen zur Zeit, wo bei der großen Masse der Reflex schon auslösbar ist, der Umklammerungstrieb gänzlich fehlt und sich auch späterhin nicht einstellt."

the ontological priority of sex over gender, his interpretations reveal an intellectual priority of gender over sex.

Further evidence of the structuring influence of binary gender conceptions on Steinach's thought can be found in his doctrine of gonadal antagonism.¹⁰⁵ Elements of this antagonistic view have already been seen, as in Steinach's proposal (quoted above) that a transplanted ovary would experience tremendous growth "in order to resist the onslaught of its new environment." For Steinach, the guinea pig experiments raised the question of why, for example, "the castrated male guinea pig grew to be massive ... resembling his normal control brother, whereas the castrated male which had received an ovarian implant revealed an entirely different type of body growth."¹⁰⁶ His answer was that "the ovary must contain, besides the substance which stimulates the development of female attributes, another substance which influences the characteristics of masculinity, but in the opposite direction, causing their repression."¹⁰⁷ In other words, in addition to developing the characteristics that correspond to it, Steinach theorized that "each gland" also "inhibits the opposite sex character, and checks its development."¹⁰⁸

Even judging by the standards of Steinach's day, this law of gonadal antagonism might seem strange. Why add the extra complication of the inhibitory effect? A theory that regards the

¹⁰⁵ He developed this theory in Steinach, "Pubertätsdrüsen und Zwitterbildung"; and Steinach, "Zwitterdrüsen." See also Eugen Steinach, "Mitteilungen aus der biologischen Versuchsanstalt der Akademie der Wissenschaften in Wien (Physiologische Abteilung; Vorstand: E. Steinach). Nr. 36. Die antagonistisch-geschlechtsspezifische Wirkung der Sexualhormone vor und nach der Pubertät," *Anzeiger der Akademie der Wissenschaften in Wien, Mathematisch-naturwissenschaftliche Klasse* 56, no. 11 (1919): 132–35; and Eugen Steinach and Heinrich Kun, "Antagonistische Wirkungen der Keimdrüsen Hormone," *Biologia Generalis* 2, no. 7 (1926): 815–34.

¹⁰⁶ Steinach, *Sex and Life*, 68.

¹⁰⁷ *Ibid.*, 68–69.

¹⁰⁸ *Ibid.*, 69.

gonads as having merely a stimulatory effect on the related sexual characteristics would still fully account for Steinach's observations, and by Occam's Razor it ought therefore to be the preferred theory. The American endocrinologist Carl Moore and his research assistant Dorothy Price eventually disproved this 'law,' but Steinach himself never fully repudiated it.¹⁰⁹ The best explanation for Steinach's behavior here seems to be that a generalized belief in an oppositional *gender* binary governed his interpretation of his findings, managing to persist even through his scientific undermining of the *sex* binary.¹¹⁰

Conclusion

Steinach's writings in the 1910s demonstrate both the strengths and the limitations of a scientific approach in cutting through socio-cultural conceptions. On the one hand, Steinach's challenges to the static sexual binary of his day gained strength because those challenges were expressed in the seemingly-sclerotic language of science and rooted in rigorous empirical observation.

Steinach was not regarded (in the 1910s) as some sort of radical or libertine, but as a dispassionate seeker of the truth, who was engaged in the austere, composed enterprise of academic publication.¹¹¹ That didn't stop his theories from having a significant influence upon

¹⁰⁹ See Carl R. Moore and Dorothy Price, "Gonad Hormone Functions and the Reciprocal Influence between Gonads and Hypophysis with Its Bearing on the Problem of Sex Hormone Antagonism," *American Journal of Anatomy* 50 (1932): 13–67. For more on Moore and Price disproving Steinach's theories of gonadal and hormonal antagonism, see Fausto-Sterling, *Sexing the Body*, 163–69; and Sengoopta, *Quintessence of Life*, 119–35.

¹¹⁰ For more gender-centric analyses of Steinach's work, see Diana Long Hall, "Biology, Sex Hormones and Sexism in the 1920's," *Philosophical Forum* 5, no. 1–2 (1973–4): 81–96; Fausto-Sterling, *Sexing the Body*, 158–63; and Maria Makela, "Rejuvenation and Regen(d)eration: Der Steinachfilm, Sex Glands, and Weimar-Era Visual and Literary Culture," *German Studies Review* 38, no. 1 (February 2015): 35–62.

¹¹¹ Nevertheless, during the excitement around "rejuvenation" in the 1920s, and much to Steinach's dismay, he would become regarded by many popular and scientific writers as something of a mad scientist, thanks mostly to sensationalist press. As the furor surrounding

those of a more activist bent, notably Magnus Hirschfeld and Harry Benjamin. It also didn't stop the Nazis from considering him dangerous; after the *Anschluss*, they seized and destroyed all his papers.¹¹² (Fortunately for him, Steinach was away on vacation at the time; he lived for the remainder of his life in Switzerland.)

Steinach's intellectual achievements would have been difficult for anyone who lacked his narrow physiological focus to attain. Sex is sex, of course, but there is a marked difference between feminizing a male guinea pig and turning a man into a woman. If Steinach had begun his sexual research with humans, one wonders whether he would have been able to overcome the sexual binary enough even to take accurate observations, and then—perhaps more importantly—to construct such imaginative and transgressive experiments. It seems probable that the achievements of his research in these years were enabled, at least in part, by his *lack* of attention to social matters. Only after concluding the experiments described in this chapter could Steinach could move on to research of more obviously social import. In this context, it is unsurprising that his later work was far less successful overall, not to mention significantly more controversial. As Steinach himself said in an interview: “If I had dealt with the physiological structure of the left wing of the grasshopper, my efforts would have been highly appreciated. But to deal with phenomena of sex and to apply the knowledge gained from experiments with animals to human beings, seems to be an unforgivable sin.”¹¹³

rejuvenation faded, so too did this reputation. For more on this subject, see chapter 3 of this dissertation.

¹¹² Eugen Steinach to Harry Benjamin, September 2, 1938, Box 2, NYAM; “Steinach Now at Work in Zurich,” newspaper fragment dated October 22, 1938, Box 2, NYAM.

¹¹³ George Sylvester Viereck, *Glimpses of the Great* (New York: Macaulay, 1930), 251. The date of this interview is unclear, but it seems likely to have occurred in the mid-to-late twenties.

To be sure, social matters *did* influence Steinach's work on guinea pig sexual transformation. This can be seen most clearly in his imposition of the human gender patterns of his day onto his animal test subjects. Steinach's research possessed the potential to challenge the supposed biological naturalness of gender roles. But that potential was not realized. Indeed, it is likely that the relation between traditional gender roles and biological sex was actually *strengthened* in Steinach's mind, since the new hormonal conception of sex held out the theoretical possibility of artificially moving people closer to the normative ideal of their perceived gender. In his next major research projects—developing endocrinological 'cures' for homosexuality and old age—he would attempt to realize that possibility. Even if 'pure' males and females are in Steinach's thought mere fictional ideals, they do not thereby lose their normativity.

In the introduction to this dissertation, I developed a distinction between *intellectual priority* and *ontological priority* when comparing a given thinker's conceptions of sex and gender.¹¹⁴ There, drawing on Thomas Laqueur's work, I proposed that pre-Enlightenment Europeans tended to conceive of gender as both intellectually and ontologically prior to sex. However, Eugen Steinach presents a different case. For Steinach, and also for many other scientists of his era, sex was the determiner of all things, including gender. In his thinking, sex had *ontological* priority over gender, but gender had *intellectual* priority over sex. To the extent that he thought of sex and gender as separate phenomena at all, he conceived of gender (or

¹¹⁴ To briefly restate the definitions: if a phenomenon has *ontological priority* within a given system of understanding, that means that a person believes the phenomenon to exist chronologically prior to whatever the phenomenon has priority over. If a phenomenon has *intellectual priority* within a given system of understanding, that means that the phenomenon 'occurs' first in a person's process of thinking, and thus serves as a lens through which that person understands whatever the phenomenon has priority over.

“psychic sexual characteristics”) as determined (ontologically) by sexual biology. But in terms of his intellectual process, the opposite was the case: his ideas of sex emerged from, and were constrained by, his pre-existing gender concepts. Steinach consistently interpreted the results of his research data in a way that can best be explained by the presence of a pre-existing gender framework that structured his understanding of his empirical findings. Above all, the intellectual priority of gender in his thinking is shown by what got called into question: for Steinach, non-binary sex was a research question to be rigorously investigated, but non-binary gender was literally unthinkable.

Chapter 3

Plastic Sex, Binary Gender: Eugen Steinach's Failed Cures for Homosexuality and Old Age

When in the male organism... the female hormone is increased, it can overcome the inhibitory influence of the male hormone and assert its influence at any of several points, giving one or another of the secondary sex characteristics a thrust in the female direction. ... Such hormonal events may eventually bring about the particular type of abnormal psychic condition known as homosexuality.

Eugen Steinach¹

Steinach's research in the 1910s conclusively demonstrated that gonadal hormones exist and (by extension) that the gonads function in an endocrine capacity as well as in a reproductive capacity. Moreover, the implications of his research reached further, undermining the foundations of the idea that biological sex exists as binary and static. But while Steinach's research in these years bristled with promise, at the time it remained mostly unknown outside the rarefied realms of physiologists and sexologists. The First World War raged across the continent, and most Europeans at this time were concerned primarily with combat on the front lines and with supply shortages, even the possibility of starvation, on the home front. They understandably had little interest in the strange experiments one mad scientist was conducting on guinea pigs, revolutionary implications for the idea of sex be damned. (To be fair, endocrinological rodent research lacked the direct applicability to life that one could find in, say, a loaf of bread—or in the absence thereof.) But as the war drew to a close, Steinach began to embark on a new series of

¹ Eugen Steinach, *Sex and Life: Forty Years of Biological and Medical Experiments* (New York: The Viking Press, 1940), 89.

experiments that would lead him to worldwide scientific celebrity, to becoming a man often paired with Freud as uncovering the hidden secrets of sex.

Steinach pursued two major research projects in the early interwar period. Both sought to remake the human body through endocrinological intervention. The first attempted to cure male homosexuality, while the second attempted to cure old age.² (Certainly one cannot accuse Steinach of lacking ambition.) These two projects, which built upon Steinach's earlier research on animals, relied on similar mechanisms and conceptual foundations. The two most important of these foundations were, first, that an organism's sex is primarily chemical (rather than physiological or chromosomal), and thus malleable; and second, that behavior, particularly sexual behavior (including what many people today would refer to as gender performance), is to a large extent, possibly even absolutely, determined by biology.

Both these intellectual *Standpunkte* had also informed Steinach's earlier research, as discussed in the previous chapter. It would not have been possible to conceive of transforming the sex of test animals through gonadal transplantation absent the idea of sex as chemical and malleable, and Steinach's extensive descriptions of his subjects revealed the extent to which he interpreted their behavior as a direct product of their sexual biology. (These descriptions also demonstrated the extent to which Steinach projected his own gender standards onto the animals when offering such interpretations.) But in his attempted cures for homosexuality and old age, Steinach pushed the implications of his sexual theory much further than he had done previously. It is one thing to assert that rat and guinea pig behavior is a direct product of sexual biology; it is quite another to assert the same for humans. The eventual (and, to present-day readers, probably

² In these years Steinach also conducted some important preliminary research aimed at isolating male and female gonadal hormones, but that project would not be fully realized until the mid-1930s. See *ibid.*, chapters 16–18.

unsurprising) failure of both these projects can be traced, among other causes, to Steinach's excessive faith in biological reductionism. While Steinach's work in the early 1910s had demonstrated the amazing potential of endocrinology to call into question, in a scientifically productive manner, the very definition of sex, his work in the late 1910s and 1920s showed the dangers of thinking that endocrinology offers a total explanation. In the previous chapter we saw that Steinach had questioned the commonplace definition of sex without also questioning his received understanding of gender; in this chapter we see the fruits of that imbalance.

Toward Human Experimentation

In 1918 Steinach's article "Transformation [*Umstimmung*] of homosexuality through exchange of puberty glands" (co-authored with Robert Lichtenstern) appeared in the *Münchener medizinische Wochenschrift*.³ It was followed in 1920 by "Artificial and natural hermaphrodite glands [*Zwitterdrüsen*] and their analogous effects" and "Histological examination of the gonads of homosexual men," articles that also investigated the possibility of a glandular etiology for homosexuality.⁴ Prior to 1918, Steinach had not published any research involving human experimentation, or even pertaining to specifically human physiology. Why the sudden shift to human subjects after more than two decades of research on animals?

³ Eugen Steinach and Robert Lichtenstern, "Umstimmung der Homosexualität durch Austausch der Pubertätsdrüsen," *Münchener Medizinische Wochenschrift* 65, no. 6 (February 5, 1918): 145–48.

⁴ Eugen Steinach, "Künstliche und natürliche Zwitterdrüsen und ihre analogen Wirkungen," *Archiv für Entwicklungsmechanik der Organismen* 46, no. 4 (July 20, 1920): 12–28; Eugen Steinach, "Histologische Beschaffenheit der Keimdrüse bei homosexuellen Männern," *Archiv für Entwicklungsmechanik der Organismen* 46 (1920): 29–37. In the former article, Steinach's concern is much broader than merely the investigation of homosexuality, but he devotes the final section of the essay to that question.

One possible answer is that the shift may not have been as sudden as it seems. While there is little direct evidence before 1918 that Steinach was heading toward an interest in human subjects, his concern with hermaphroditism, a theme that appears with increasing frequency throughout Steinach's writings in the 1910s, perhaps points toward human biology. The question of whether people with ambiguous genitalia constitute *true* hermaphrodites or mere *pseudohermaphrodites*—that is, individuals who, upon careful (often surgical) medical inspection, could be declared 'definite' members of one sex or the other—occupied many pages of late-nineteenth- and early-twentieth-century medical journals.⁵ Weininger, Freud, Hirschfeld, and many others deployed the concept of human hermaphroditism at various points in their respective work as they developed arguments about the nature of sex. They evidently assumed that the reader would already be aware of such issues.⁶

Of course, the idea of hermaphroditism is just as applicable to animals as it is to humans, but in the early twentieth century the idea was thoroughly associated with questions about human sex. One might reasonably suppose that the appearance of 'hermaphroditism' and especially of 'pseudohermaphroditism' in Steinach's work signaled a desire to expand his research into the

⁵ Alice Domurat Dreger, *Hermaphrodites and the Medical Invention of Sex* (Cambridge, MA: Harvard University Press, 1998). See also Dreger's earlier article, "Hermaphrodites in Love: The Truth of the Gonads," in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1996), 46–66.

⁶ See, for example, Otto Weininger, *Sex and Character: An Investigation of Fundamental Principles*, trans. Ladislaus Löb (Vienna: Wilhelm Braumüller, 1903; Bloomington: Indiana University Press, 2005), 14; Sigmund Freud, "Three Essays on the Theory of Sexuality," in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, trans. James Strachey, vol. 7 (1905; London: Hogarth, 1953), 123–248, at 141–45; Sigmund Freud, "The Psychogenesis of a Case of Homosexuality in a Woman," in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, ed. James Strachey, trans. Barbara Low and R. Gabler, vol. 18 (1920; London: Hogarth, 1955), 145–76, at 170; Magnus Hirschfeld, *Sappho und Sokrates, oder Wie erklärt sich die Liebe der Männer und Frauen zu Personen des eigenen Geschlechts?* (Leipzig: Max Spohr, 1896); or Magnus Hirschfeld, "Die objektive Diagnose der Homosexualität," *Jahrbuch für sexuelle Zwischenstufen* 1 (1899): 4–35.

realm of humanity. This seems especially likely given that the first appearance of these concepts in his work—in “Intentional transformation [*Umwandlung*] of mammals,” the 1912 article first detailing his cross-sex gonad transplantation experiments—occurs in a quick aside in a paragraph at the end of a section of the article. Although this paragraph is not quite a non-sequitur, it stands as a curious departure from the text directly prior to it, which discusses the results of Steinach’s experiment transplanting ‘male’ gonads into spayed ‘female’ guinea pigs.⁷ Hermaphroditism makes another brief appearance in his next article, in 1913, before becoming a primary subject of his research in a 1916 article detailing the possibilities of creating artificial hermaphrodites by transplanting both testicles and ovaries (at the same time) into guinea pigs castrated or spayed shortly after birth.⁸ In 1916 Steinach also began clinical experiments for his cure for homosexuality, and so it seems reasonable that the two ideas—namely, hermaphroditism and human homosexuality—were linked in his mind.⁹ It is reasonable to suppose that a consideration of hermaphroditism led him to issues of human physiology.¹⁰ Tellingly, the few passages in Steinach’s autobiography (published in 1940) that concern his research into homosexuality appear at the end of the chapter describing his work on artificial hermaphrodites.¹¹

⁷ Eugen Steinach, “Willkürliche Umwandlung von Säugetier-Männchen in Tiere mit ausgeprägt weiblichen Geschlechtscharakteren und weiblicher Psyche,” *Pflügers Archiv für die gesammte Physiologie des Menschen und der Thiere* 144 (1912): 72–108, at 85–86.

⁸ Eugen Steinach, “Feminierung von Männchen und Maskulierung von Weibchen,” *Zentralblatt für Physiologie* 27, no. 14 (October 4, 1913): 717–23, at 723; Eugen Steinach, “Pubertätsdrüsen und Zwitterbildung,” *Archiv für Entwicklungsmechanik der Organismen* 42 (1916): 307–32.

⁹ It should also be noted that it was also relatively common in the late nineteenth and early twentieth centuries to refer to homosexuals as “spiritual hermaphrodites.” This tendency can be seen, for example, in the work of Karl Heinrich Ulrichs and of Johann Ludwig Casper.

¹⁰ See Steinach and Lichtenstern, “Umstimmung der Homosexualität,” 146.

¹¹ Steinach, *Sex and Life*, 89–92. Harry Benjamin, in his obituary for Steinach, also gives credit to Steinach’s work on artificial hermaphroditism as giving rise to the subsequent research on

Certainly, in hindsight, Steinach saw his work as forming a continuous narrative, with each new experiment building on the previous. In an interview (probably conducted in the early twenties) with the journalist George Sylvester Viereck, he described his sex research as having proceeded in four distinct steps, each leading to the next.¹² The first step was his work with autoplasmic transplantation of gonads; the second was the arbitrary induction of masculinity and femininity through gonadal transplants; the third was the creation of artificial hermaphrodites; and the fourth step was “the practical application of the knowledge acquired” to issues concerning humanity. The fourth step included, as sub-points, his work to restore “virility” to those who had suffered castration in accidents, his cure for homosexuality, and his new science of rejuvenation.¹³

In any case, Steinach’s research paints a portrait of a scientist with nearly infinite ambition, and in that regard—whatever the intellectual path that led him to his projects of the late 1910s and 1920s—it is hardly surprising that he would want to illuminate the depths of the human subject.¹⁴ Certainly the shift in his research focus was timely. The animal test subjects of

human sexuality. Harry Benjamin, “Eugen Steinach, 1861–1944: A Life of Research,” *The Scientific Monthly* 61, no. 6 (1945): 427–42, at 433.

¹² It seems likely to me that Viereck conducted the interview while he was preparing his earlier work on Steinach, which he published under the pseudonym George Corners. *Rejuvenation: How Steinach Makes People Young* (New York: Seltzer, 1923). Additionally, one of the archived letters between Steinach and Harry Benjamin indicates that in 1923 Steinach was planning to write a popular science book that would describe the “entire historical development” of his research. Eugen Steinach to Harry Benjamin, February 3, 1923, Box 1, Eugen Steinach–Harry Benjamin Correspondence, Rare Book and Archive Collection, New York Academy of Medicine, New York, NY (hereafter cited as “NYAM”).

¹³ George Sylvester Viereck, *Glimpses of the Great* (New York: Macaulay, 1930), 252–54. I discuss the first two of Steinach’s “steps” in chapter 2 of this dissertation.

¹⁴ Robert Lichtenstern, Steinach’s research partner on the issue of homosexuality, considered human experimentation to be the obvious next step after the animal experiments. See, for example, Robert Lichtenstern, “Mit Erfolg ausgeführte Hodentransplantation am Menschen,” *Münchener Medizinische Wochenschrift* 63, no. 19 (May 9, 1916): 673–75, at 674; and Robert

Steinach's previous work had lent that research an air of theoretical abstraction, but Steinach's new projects were directly concerned with the *human* experience of life, and their tentative results—which in all cases concerned a restoration of 'virility'—were attuned to the anxieties of masculinity in the immediate postwar period. Many soldiers had returned from the war with genital injuries that damaged their reproductive capabilities and their sense of manliness. Injuries of this kind loomed large in the postwar imagination, as seen, for example, in such literary works as Ernst Toller's *Hinkemann* (1923), Ernest Hemingway's *The Sun Also Rises* (1926), and D. H. Lawrence's *Lady Chatterly's Lover* (1928).¹⁵ In 1923 the Viennese psychoanalyst Wilhelm Stekel devoted a chapter to war-related impotence in his large study, *Impotence in the Male*.¹⁶ He estimated that hundreds of thousands of veterans had been rendered impotent by the war, and declared that "in recent years... Almost every consultation hour brought one or more ex-soldiers who had become impotent while in the field."¹⁷

The prevalence of genital injuries in the post-war imagination can be traced to various sources. For one, the scale of the war meant that the percentage of the population with war-related trauma (physical and psychological) was much higher than anything European people had previously known. (The United States, in contrast, had already experienced a somewhat similar situation in the aftermath of the American Civil War.) Next, the increased use of explosive

Lichtenstern, "Bisherige Erfolge der Hodentransplantation beim Menschen," *Jahreskurse für ärztliche Fortbildung* 11, no. 4 (1920): 8–11, at 9.

¹⁵ On the general phenomenon of impotence in literature in the aftermath of war, see Elizabeth Klaver, "Erectile Dysfunction and the Post War Novel: *The Sun Also Rises* and *In Country*," *Literature and Medicine* 30, no. 1 (Spring 2012): 86–102.

¹⁶ Wilhelm Stekel, *Impotence in the Male: The Psychic Disorders of Sexual Function in the Male*, trans. Oswald H. Boltz (Berlin: Urban & Schwarzenberg, 1923; New York: Liveright, 1927), vol. 2, chapter 18.

¹⁷ *Ibid.*, 2:175–176.

weaponry making use of shrapnel made genital injuries more common than in previous wars, even as advances in medical technology meant that soldiers were more likely to survive such wounds. Even among soldiers who did not suffer genital injuries, psychological trauma contributed to erectile dysfunction and impotence. Additionally, Europeans had in general been obsessed with impotence and perceived crises of masculinity for some time; the prominence of wounded and shell-shocked soldiers in the interwar years—not to mention (for Germans and Austrians) the shame of having lost the war—just gave this perennial concern a new symbol.¹⁸

Moreover, many soldiers engaged in homosexual activity during their time at the front. Many of them understood such activity to be either situational or an expression of accepted, normative masculinity, and thus within the bounds of early-twentieth-century German and Austrian gender norms. However, others felt shame about their wartime sexual experiences, and sought to hide or correct whatever tendencies toward sexual inversion they saw within themselves. Many experienced profound alienation upon returning from the war, particularly if their wartime sexual activities were discovered, or if they attempted to continue having sexual encounters with other men back at home.¹⁹

Steinach's research found a fertile ground in this environment of physiologically and symbolically wounded masculinity. (Indeed, many of his patients in these years were veterans of the Great War.) His proposed cure for homosexuality promised relief to those who felt that they

¹⁸ On cultural images of impotence and masculinity, see Angus McLaren, *Impotence: A Cultural History* (Chicago: University of Chicago Press, 2007), particularly chapters 7 and 9. On trauma and memory after World War I, see Jay Winter, *Sites of Memory, Sites of Mourning: The Great War in European History* (Cambridge: Cambridge University Press, 1995); Jason Crouthamel, *The Great War and German Memory: Society, Politics and Psychological Trauma, 1914–1945* (Exeter: University of Exeter Press, 2009); and Jason Crouthamel, *An Intimate History of the Front: Masculinity, Sexuality, and German Soldiers in the First World War* (New York: Palgrave Macmillan, 2014).

¹⁹ See Crouthamel, *An Intimate History of the Front*, particularly chapters 5 & 6.

had come back from the war alive but incomplete. More broadly, it offered the possibility of ending the seemingly endless spiral of degeneracy and effeminacy that many believed had been gripping Europe with increasing tightness for decades. Steinach's proposed cure for old age offered a similar hope of restoring 'virility' to those who had lost it. It was this promise of rejuvenation, above all else, that caught the attention of the popular press and led to a decade or so of remarkable celebrity for the reclusive Viennese physiologist.

Homosexuality and Testicular Transplantation

Before we examine the (theoretically) rejuvenatory 'vasoligation' technique for which Steinach became famous, let us turn our attention to his earlier project, the cure for homosexuality in males. As mentioned above, Steinach first published research pertaining to this project in 1918, having begun clinical work on the project in 1916. At the time, homosexuality played a prominent role in discourse about the 'modern age.' Although homosexuality had not yet reached the level of visibility that it would later achieve, particularly in Berlin, during the interwar years, it was a major touchstone of *fin-de-siècle* literary, academic, and popular writing.²⁰ The term *Homosexualität* was itself relatively new, having been coined in 1869 by the Austro-Hungarian journalist Karl-Maria (Károly Mária) Kertbeny.²¹ It achieved widespread usage in German-

²⁰ See Peter Cryle and Christopher E. Forth, eds., *Sexuality at the Fin de Siècle: The Makings of a "Central Problem"* (Newark, DE: University of Delaware Press, 2008).

²¹ Scott Spector, "After *The History of Sexuality*? Periodicities, Subjectivities, Ethics," in *After The History of Sexuality: German Genealogies with and beyond Foucault*, ed. Scott Spector, Helmut Puff, and Dagmar Herzog (New York: Berghahn Books, 2012), 1–14, at 2. On the history of the term 'homosexuality,' see in particular George Chauncey, "From Sexual Inversion to Homosexuality: Medicine and the Changing Conceptualization of Female Deviance," *Salmagundi*, no. 58/59 (1982–3): 114–46; as well as David M. Halperin, "One Hundred Years of Homosexuality," *Diacritics* 16, no. 2 (1986): 34–45. On Kertbeny in particular, see Ralph M. Leck, *Vita Sexualis: Karl Ulrichs and the Origins of Sexual Science* (Urbana: University of Illinois Press, 2016), chapters 2–3. These accounts are slightly *contra* Michel Foucault, who

speaking countries thanks especially to Richard von Krafft-Ebing, who used the term (along with its near synonym, ‘sexual inversion’) extensively in his landmark study *Psychopathia Sexualis* (first published in 1886), which is generally regarded as the first major work of modern sexology.²² Many writers, particularly of a conservative orientation, linked the seemingly-new prevalence of homosexuality to a crisis of masculinity affecting occidental civilization at large.²³ Otto Weininger, who argued that homosexuality is the natural sexual expression of those individuals who possess a near balance of biological masculinity and biological femininity, regarded his era as one particularly rife with such hermaphroditic characters, including not only male and female homosexuals, but also women’s rights activists.²⁴ Others saw the issue less

famously (and briskly) asserted that the birth of the modern concept of homosexuality occurred in 1870. See *The History of Sexuality, Volume I: An Introduction*, trans. Robert Hurley (Paris: Editions Gallimard, 1976; New York: Random House, 1978), 43. For an insightful (and, by now, classic) critique of the search for the ‘birth’ of modern homosexuality, see Eve Kosofsky Sedgwick, *Epistemology of the Closet*, 2nd ed. (1990; Berkeley: University of California Press, 2008), 44–48.

²² Richard von Krafft-Ebing, *Psychopathia Sexualis*, trans. Franklin S. Klaf, Reprint edition (1886; New York: Arcade Publishing, 2011). For ease of reading, I will generally use ‘sexual inversion’ and ‘homosexuality’ as synonyms for each other. But as George Chauncey has noted, the terms had important connotational differences. See Chauncey, “From Sexual Inversion to Homosexuality.”

²³ See George L. Mosse, *Nationalism and Sexuality: Respectability and Abnormal Sexuality in Modern Europe* (New York: Fertig, 1985); Judith Surkis, *Sexing the Citizen: Morality and Masculinity in France, 1870–1920* (Ithaca: Cornell University Press, 2006); Elena Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom: A History of the First International Sexual Freedom Movement* (New York: Palgrave Macmillan, 2010), 94–102. On the related subject of a perceived crisis of masculinity in heterosexual relations, see Edward Ross Dickinson, “‘A Dark, Impenetrable Wall of Complete Incomprehension’: The Impossibility of Heterosexual Love in Imperial Germany,” *Central European History* 40, no. 03 (September 2007). As many commentators have noted, the perception that masculinity is in ‘crisis’ is not limited to this historical or geographic period; in fact, such a perception is nearly omnipresent throughout modern history. On this point, see Bryce Traister, “Academic Viagra: The Rise of American Masculinity Studies,” *American Quarterly* 52, no. 2 (June 1, 2000): 274–304.

²⁴ Weininger, *Sex and Character*, 64. Weininger believed in a form of historico-biological periodicity, such that certain biological types tend to become more prominent for several decades once every few centuries. Many of the biological characteristics of the modern age, he claimed,

negatively. In Germany, Magnus Hirschfeld's network of activists had put a public spotlight on the issue of homosexual legal emancipation since 1898. In a less organized manner, the anarchist intellectual Adolf Brand assembled a group known as the *Gemeinschaft der Eigenen* (translatable as 'Community of the Special' or as 'Community of the Self-Owned'), which held that homosexuality is a more masculine and thus superior form of sexual and social expression than is heterosexuality. In this perspective, homosexuals stood as Nietzschean *Übermenschen* (or perhaps *Übermänner*) compared to society at large.²⁵

Brand's view was not widely shared, although it was influential in certain circles of the homosexual rights movement.²⁶ Even those who argued for the decriminalization of sodomy usually regarded homosexuality as an unfortunate affliction.²⁷ For most people at the time, including many or perhaps even most of those who experienced same-sex desire, homosexuality was a problem—and an increasingly visible one—that needed to be solved. A number of proposed cures (or at least therapies) for homosexuality were common at this time, ranging from Freudian psychoanalysis, to religious intervention, to simply encouraging (or forcing) the invert

could also be seen in the tenth, fifteenth, and sixteenth centuries, but not in the intervening years (63–5). It should be noted that although Weininger shared the view of many of his contemporaries that homosexuality was particularly endemic to contemporary society, he did not share their condemnation of homosexuality, and in fact argued quite forcefully that there no moral distinction exists between homosexual and heterosexual sex acts (45–6). For more on Weininger, see chapter 1 of this dissertation.

²⁵ As Crouthamel reports, Brand was particularly keen to capitalize on the wartime homosexual experiences of many German soldiers when constructing his image of the hypermasculine homosexual. Crouthamel, *An Intimate History of the Front*, chapter 5. For much more on Hirschfeld, and a bit more on Brand, see chapter 4 of this dissertation.

²⁶ See Robert Beachy, *Gay Berlin: Birthplace of a Modern Identity* (New York: Knopf, 2014), chapter 5.

²⁷ Hirschfeld, for example, compared homosexuality to having a harelip in his first sexological work, the pamphlet *Sappho and Socrates* (1896), in order to argue that homosexuality is unfortunate but harmless.

to engage in heterosexual intercourse or to get married.²⁸ Most of these cures assumed that homosexuality is, at least in part, an acquired condition, and therefore that it can be cured or treated through psychological or social intervention.

In contrast, Steinach believed that the etiology of homosexuality is primarily, perhaps even entirely, biological in character, and that any possible cure for the ‘condition’ would have to rely on biological intervention.²⁹ In his previous experiments Steinach had been keen to note that his test animals exhibited significant behavioral changes, in addition to the more obvious physical changes. These observed behavioral modifications indicated to Steinach that the hormonal secretions of the gonads control both physiological sexual characteristics and also psychological sexual behavior. As he put it, “my transplantation experiments have not only freed the hypothesis—that sexual characteristics are governed by the puberty glands—from all doubt and objection, but also expanded its validity into psychosexual phenomena.”³⁰ If a guinea pig

²⁸ A historical monograph studying proposed cures for homosexuality still remains to be written. But for more focused partial histories, see Rainer Herrn, “On the History of Biological Theories of Homosexuality,” in *Sex, Cells, and Same-Sex Desire: The Biology of Sexual Preference*, ed. John P. De Cecco and David Allen Parker (New York: Harrington Park Press, 1995), 31–56 (which was also simultaneously published in *The Journal of Homosexuality* 28, no. 1); Jack Drescher, “I’m Your Handyman: A History of Reparative Therapies,” *Journal of Homosexuality* 36, no. 1 (June 22, 1998): 19–42; and Tommy Dickinson, *“Curing Queers”: Mental Nurses and Their Patients, 1935–1974* (Manchester: Manchester University Press, 2014). For the recent past, see Tom Waidzunas, *The Straight Line: How the Fringe Science of Ex-Gay Therapy Reoriented Sexuality* (Minneapolis: University of Minnesota Press, 2015). For a primary-source listing of proposed cures for homosexuality in the German Empire, see Magnus Hirschfeld, *Die Homosexualität des Mannes und des Weibes*, 1st ed. (Berlin: Louis Marcus Verlagsbuchhandlung, 1914), chapter 22.

²⁹ On the history of biological approaches to homosexuality, see Herrn, “History of Biological Theories of Homosexuality.” Herrn discusses Steinach at pp. 44–47.

³⁰ Steinach, “Pubertätsdrüsen und Zwitterbildung,” 329; “...meine Transplantationsversuche haben die Annahme, daß die Sexuszeichen einzig und allein von den Pubertätsdrüsen beherrscht werden, nicht bloß von allen Zweifeln und Einwänden befreit, sondern ihre Gültigkeit auch auf die psychosexuellen Erscheinungen ausgedehnt.”

born male could be induced to abandon its “masculine courage” for “feminine shyness”—and if a masculinized female guinea pig could obtain a “*distinctly male sexual instinct*,” including the tendency to “incessantly pursue... passionately court... and spring upon” rutting females—then this implied to Steinach that the direction of the sexual instinct is hard-coded into an organism’s biology along with the rest of its sexual attributes.³¹ Moreover, if such gender abnormality can be induced artificially in test animals, then shouldn’t it be possible to use similar techniques to eliminate such behavior when it occurs naturally in humans? Such was the animating thought behind Steinach’s proposed cure for homosexuality.

The particular impetus for the project seems to have occurred in 1915, when Steinach attended a testicular transplantation operation conducted by Robert Lichtenstern, a Vienna urologist.³² Lichtenstern was a devotee of Steinach’s work; his writings glow with appreciation for the physiologist’s research, which “had established a new foundation for mammalian testicular transplantation” through the creation of the “infantile castrate” technique.³³ Lichtenstern had previously worked with Steinach at the Biological Research Institute, and had apparently provided at least some assistance in conducting the latter’s animal transplantation experiments.³⁴ But now it was time to take the next step. “In recognition of *Steinach’s* successful

³¹ Steinach, “Feminierung,” 722; “*Die maskulierten Weibchen erhalten ausgeprägt männlichen Sexualtrieb, sie unterscheiden sofort ein nichtbrünstiges von einem brünstigen Weibchen. Sobald sie ein solches agnoszieren, verfolgen sie es unaufhörlich, umwerben es leidenschaftlich und springen auf.*” (“Masculinized” is the translation of *maskuliert* that is used in *Sex and Life*.)

³² This experiment also receives particular attention in Steinach and Lichtenstern’s write-up of their first experiment developing the cure for homosexuality. See Steinach and Lichtenstern, “Umstimmung der Homosexualität,” 146.

³³ Lichtenstern, “Mit Erfolg,” 674; “Die Hodentransplantation bei Säugern hat *Steinach* auf eine neue Grundlage gestellt.” See also Robert Lichtenstern, *Die Überpflanzung der Männlichen Keimdrüse* (Vienna: Verlag von Julius Spencer, 1924), 86–90.

³⁴ See Lichtenstern, “Mit Erfolg,” 674; and Lichtenstern, “Bisherige Erfolge,” 9.

transplantations in mammals,” Lichtenstern hoped “to utilize these important facts found in the animal experiments in real cases of humans”—something that had never yet been attempted successfully, as far as he knew.³⁵ He particularly wanted to assist men who had lost their testicles through disease or accident. For “a fully-grown man,” he wrote, such a condition “is accompanied not only by physical consequences, but also by difficult psychical consequences in particular, which often make the continued existence of this unlucky man impossible.”³⁶ Lichtenstern surmised that if new testicles could be transplanted into the patient’s body then those symptoms could be reversed.³⁷

Lichtenstern’s patient was a twenty-nine-year-old soldier, a former farmer, who had lost both testes after being shot with an explosive shell in the left thigh during an assault. (Note that the patient had not one, but *two* masculine-coded jobs.) After the initial wound healed, he complained of having “absolutely no libido” and being unable to have an erection for six weeks in a row. Lichtenstern recorded that the man displayed an increase in body fat, particularly around the throat, “*which imparted a strange, stupid expression to the patient.*” His “*facial hair, particularly the moustache, fell out almost completely*” and in general his body “*became almost completely hairless*”—that is, soft and feminine.³⁸ The transplantation operation occurred on

³⁵ Lichtenstern, “Mit Erfolg,” 674; “In Kenntnis der gelungenen Transplantationen *Steinachs* beim Säugetiere...”; “...diese durch die Tierexperimente gefundenen wichtigen Tatsachen im gegebenen Falle beim Menschen zu verwerten...”

³⁶ Ibid., 674; “Der Verlust beider Hoden beim vollreifen Manne ist nicht nur von physischen, sondern insbesondere von schweren psychischen Folgen begleitet, die oft das Weiterleben für diesen Unglücklichen unmöglich machen.”

³⁷ Because testosterone (and other gonadal hormones) had not yet been isolated or synthesized, gonadal transplants were thought at this time to be the most effective way of increasing a patient’s supply of “male hormone.”

³⁸ Lichtenstern, “Mit Erfolg,” 674; “absolut keine Libido”; “der dem Kranken einen merkwürdigen stupiden Ausdruck verlieh”; “Die Barthaare, insbesondere der Schnurrbart, fielen fast ganz aus”; “die fast haarlos wurde.”

August 31, 1915. Lichtenstern invited Steinach to come observe the procedure; the urologist recorded that “Prof. *Steinach* was gracious enough to be present at the operation”; he recommended that Lichtenstern follow the technique that he (Steinach) had developed in his animal experiments.³⁹ Lichtenstern did so, slicing the donor testis in half—in order to more easily connect it to the circulatory system—and implanting both halves in the patient’s stomach muscles. (The testicle had been donated by a man suffering from an inguinal hernia.) Seven days later, the patient reported having a “*light erection*” before his morning urination, and his erections increased in strength over the next week. By two weeks after the operation, “*the patient bragged joyously and excitedly that his libido was there once more,*” that he felt “tremendously fresh and well,” and that he’d had “erotic dreams with powerful erections.”⁴⁰ By mid-October, the patient had successfully engaged in coitus a few times, stating that he “*felt very powerful sexually*” and that his intercourse resulted in “an ejaculation of a small amount of grey mucus with the normal sensation.”⁴¹ Lichtenstern recorded that by this point the patient’s beard had begun to return, his fat accumulation had waned, and “he exhibited a striking elevation of his intelligence.”⁴²

These bodily changes were important for Lichtenstern because they provided evidence supporting the endocrinological understanding of sex that Steinach had developed over the previous several years, and that had been the theoretical basis for Lichtenstern’s experiment. If

³⁹ Ibid., 675; “Prof. *Steinach* hatte die Güte, bei der Operation anwesend zu sein, und empfahl...”

⁴⁰ Ibid., 675; “14 Tage nach dem Eingriff *gab der Kranke freudig erregt an, dass seine Libido wider da sei, dass er sich ungemein frisch und wohl fühlte; er hatte erotische Träume mit kräftigen Erektionen.*”

⁴¹ Ibid., 675; “...gab er an, *sich geschlechtlich sehr kräftig zu fühlen*”; “eine Ejakulation einer geringen Menge grauen Schleims mit normaler Empfindung.”

⁴² Ibid., 675; “er zeigte eine auffallende Hebung seiner Intelligenz.”

we assume that Lichtenstern was accurate in observing that the patient's facial hair growth abated after the loss of the testis, only to return following the transplantation, then the result would certainly have been important for medical knowledge.⁴³ But many of the urologist's observations were guided by his understanding of male and female gender norms, possibly to the detriment of his experiment. The causal (and casual) link that Lichtenstern makes between the patient's accumulation of fat and his apparent stupidity—the paradigmatic man at this time being both muscled and intelligent—is quite telling.⁴⁴ What evidence did Lichtenstern have of the patient's intelligence? Beyond his appearance, none is given. While his claim that the patient's neck fat gave him a “strange, stupid expression” might be regarded as simply an aesthetic judgment (though still out of place in a medical article), the second claim, concerning the patient's intelligence returning at the same time as he lost body fat, implies that Lichtenstern really did find the idea of a link between somatic masculinity and intelligence to be completely reasonable. It appears that the patient held similarly gendered understandings of sexual biology, as indicated by his connection of his ability to engage in sexual intercourse with feeling powerful. In these examples, it seems clear that, while Lichtenstern (and the patient) held sex to have ontological priority over gender, their thought process can only be explained if we assume that within it gender carried intellectual priority over sex. If it were otherwise, then there would be no reason to assume that factors such as decreased body fat meant an increase in somatic masculinity.

⁴³ In a subsequent article, Steinach and Lichtenstern claimed that the effects of the operation were still present even two and a half years later. However, given that many of the described effects were extremely subjective, there is reason to suspect observer bias in this claim. Steinach and Lichtenstern, “Umstimmung der Homosexualität,” 146.

⁴⁴ On the paradigmatic man of the time, see, for example, Hirschfeld's description of the biologically “ideal” man in *Die Transvestiten. Eine Untersuchung über den erotischen Verkleidungstrieb* (Berlin: Alfred Pulvermacher & Co., 1910), 290 [226].

By nine months out, the urologist felt confident enough to report “*that all physical and psychical symptoms from the loss of the testicles have been reduced [zurückgebildet],*” although he conceded that it was still too early to make a judgment about the length of the effect upon the patient.⁴⁵ Nevertheless, given the results of Steinach’s animal experiments, Lichtenstern had high hopes that the effectiveness of the transplantation would last for years. Regardless, he felt confident enough to declare in the final sentences of his article that “*The success of the operation—with respect to the restoration, in a somatic and psychic manner, of the sexual characteristics that had been both harmed and diminished through total castration—is exclusively thanks to the inner-secreting activity of the implanted male puberty gland [note here Lichtenstern’s use of Steinach’s terminology]. With this result, the respective findings of animal experiments are also perfectly confirmed for humans.*”⁴⁶ In other words, his results confirmed (or seemed to confirm) that Steinach’s endocrinological and sexual theories are applicable to human as well as to animal biology. The major difference was that where Steinach’s earlier experiments had attempted to make a male animal into a female animal (or *vice versa*), Lichtenstern sought to make a male human *more male* than he had been previously. Such would also be the dominant impulse behind his collaboration with Steinach to cure homosexuality.

The Failed Cure for Homosexuality

Regardless of whether Steinach had been actively contemplating human research prior to

⁴⁵ Lichtenstern, “Mit Erfolg,” 675; “*alle physischen und psychischen Merkmale des Hodenverlustes sich zurückgebildet haben.*”

⁴⁶ Ibid., 675; “*Der Erfolg der Operation bzw. der Wiederherstellung des durch die totale Kastration teils geschädigten, teils verminderten Geschlechtscharakters somatischer und psychischer Art ist ausschliesslich der innersekretorischen Tätigkeit der eingepflanzten männlichen Pubertätsdrüse zu verdanken. Durch dieses Ergebnis sind die bezüglichen tierexperimentellen Befunde auch beim Menschen einwandfrei bestätigt.*”

observing Lichtenstern's operation, he began moving quickly in that direction following the event. Less than a year later, and not even two months after the publication of Lichtenstern's report on the operation, Steinach teamed up with the urologist to conduct a new experiment, one even more ambitious than what Lichtenstern had been attempted previously. Where the urologist's 1915 operation had sought only to transplant a new testis into a patient who had been wounded, Steinach wanted to *replace* the seemingly-inadequate testicles of a sexual invert. On the basis of his work creating artificial hermaphrodites, Steinach theorized that homosexuality in most men is caused by abnormal testicles that were insufficiently differentiated during embryonic development, resulting in "*hermaphroditic (zwitterigen) puberty glands*" that secrete both male and female sex hormones.⁴⁷ He hypothesized that the subsequent deficit of male gonadal hormone (relative to what Steinach assumed are the normal male levels) and the simultaneous surplus of female gonadal hormone caused the male homosexual's sex drive to invert, in addition to promoting all sorts of other non-gender-normative behavior.

As the intellectual origin of Steinach's theory (in his work on artificial hermaphrodites) indicates, his was a theory of homosexuality that was fully rooted in the idea of biological sex as a spectrum. Indeed, the procedure makes no sense in any other context. Although conceptions of homosexuals as being more effeminate than 'normal' men have a long history—and they were particularly common in turn-of-the-century Germany and Austria thanks to the proliferation of

⁴⁷ Steinach and Lichtenstern, "Umstimmung der Homosexualität," 146. Today it is known that all healthy testicles produce estrogen as well as testosterone and other androgens. As Rex Hess notes, "Testosterone and estrogen are no longer considered male only and female only hormones." Indeed, male fertility actually *requires* the presence of estrogen (or its α -receptor). (Rex A. Hess, "Estrogen in the Adult Male Reproductive Tract: A Review," *Reproductive Biology and Endocrinology* 1 (2003): 52.) In the late 1910s, however, Steinach was in good scientific company in assuming that only male sex hormone is normally produced by testes, and that only female sex hormone is normally produced by ovaries.

Karl Heinrich Ulrich's conception of homosexuality as *anima muliebris virili corpore inclusa* (a female soul confined in a male body)—Steinach's theory saw homosexual men as being *literally* (that is, biologically and quantifiably) more female than heterosexual men.⁴⁸ As Steinach put it in a subsequent research report, "*the deviant sexual inclination of homosexual men is connected with the hermaphroditism of their puberty gland, and therefore establishes that the male elements of the gland already lose their inner-secretory power at the time of puberty through an 'activation' of the feminine elements, which, under the influence of the sexual hormones produce an 'erotization' of the extremely sensitive nervous apparatus in a feminine direction.*"⁴⁹ Here we can see clearly Steinach's reliance upon a sexual spectrum: his cure for homosexuality is only conceivable in a world in which it is possible for one's biological masculinity to move in a 'feminine direction,' and in which the clever surgeon can intervene to push the patient back toward the 'normal' levels of biological masculinity.

In this mindset, the solution to the problem of homosexuality became simple: if the patient's faulty testicles could be removed and replaced with transplants from a 'healthy' donor, then the patient's sexual chemistry ought to revert to "normal" male levels. In theory,

⁴⁸ On the history of 'homosexuality' in comparison to perceptions of effeminacy, see in particular David M. Halperin, "How to Do the History of Male Homosexuality," in *How to Do the History of Homosexuality*, by David M. Halperin (Chicago: University of Chicago Press, 2002), 104–37.

⁴⁹ Eugen Steinach, "Mitteilungen aus der biologischen Versuchsanstalt der Akademie der Wissenschaften in Wien (Physiologische Abteilung; Vorstand: E. Steinach). Nr. 38. Experimentelle und histologische Beweise für den ursächlichen Zusammenhang von Homosexualität und Zwitterdrüse," *Anzeiger der Akademie der Wissenschaften in Wien, Mathematisch-naturwissenschaftliche Klasse* 56, no. 11 (1919): 138–42, at 139–40; "...*die abweichende Geschlechtsneigung homosexueller Männer mit der Zwitterigkeit ihrer Pubertätsdrüse zusammenhängt und dadurch zustandekommt, daß die männlichen Elemente derselben schon zur Pubertätszeit die innersekretorische Kraft einbüßen, während die weiblichen Elemente 'aktiviert,' die auf den Zufluß der Sexualhormone äußerst fein reagierenden nervösen Apparate in weiblicher Richtung 'erotisiert' werden.*"

heteronormative behavior would inevitably follow.⁵⁰ As he and Lichtenstern put it in their report on the procedure, this transplantation should accomplish “the retuning of the central organ [i.e., the brain and nervous system] in a normal, that is, in a heterosexual, direction; likewise, the integrity of the homologous somatic sexual characteristics would be ensured.”⁵¹ Such use of “normal” to imply heterosexuality (and other gender-normative behavior) occurs frequently in the article, and serves as an early indicator that this procedure was rooted just as much in an assumption of a gender binary as it was in a sexual spectrum.

Steinach and Lichtenstern’s test patient was a thirty-year-old man who had been diagnosed with tuberculosis a year before. His left testis had been removed shortly after diagnosis, owing to complications from the disease, and now he needed to have the remaining testicle excised as well. The patient reported having had homosexual feelings since the age of fourteen. This was critical for Steinach, as it indicated that the patient’s testicles had always been deficient, and that his homosexuality was not the result of the tubercular damage. Steinach and

⁵⁰ In theory, the same process could also work with female homosexuals—that is, by removing the patient’s ovaries and replacing them with transplants from a donor. (Indeed, Sigmund Freud recognized the theoretical validity of a female version of Steinach’s cure for homosexuality, although he rejected it as having “little prospect of application in practice.” Freud, “Psychogenesis,” 172; translation slightly altered.) As far as I am aware, Steinach never published anything suggesting this idea, but if he had, he would have been building upon a well-established medical concept. In the late nineteenth and early twentieth centuries, many medical doctors believed that malfunctioning ovaries could cause a number of ‘female’ disorders, such as hysteria and nymphomania. Women diagnosed with such disorders frequently underwent oophorectomy. The practice of compulsive oophorectomy had mostly died out by the 1920s, but it seems reasonable to suppose that Steinach might have revived the practice with an endocrinological twist, had he published anything proposing ovarian transplantation as a cure for lesbianism. (However, his focus remained exclusively on male homosexuality.) See Chandak Sengoopta, *The Most Secret Quintessence of Life: Sex, Glands, and Hormones, 1850–1950* (Chicago: University of Chicago Press, 2006), 15–28; and 40–45.

⁵¹ Steinach and Lichtenstern, “Umstimmung der Homosexualität,” 146; “durch die Einpflanzung hingegen soll die Erotisierung bzw. Umstimmung des Zentralorgans in normale, also heterosexuelle Richtung vollzogen und zugleich die Integrität der homologen somatischen Geschlechtscharaktere gesichert werden.”

Lichtenstern also described the patient as presenting evidence of somatic feminization. They reported that his moustache was “very thin and soft” and that he possessed “mightily developed, bulging mammaries of the size and kind of an average young woman’s breast,” with “broad areolae” and “pink-colored nipples.”⁵² All of this supported their theory about the endocrinological etiology of homosexuality, because if homosexuality is caused by a deficiency of male hormones (and an accompanying surplus of female hormones), then one would expect to see those endocrine effects elsewhere in the body. The donor, in contrast, was a “married reserve soldier with a fully normal sex drive” who happened to possess an undescended testicle that needed to be removed.⁵³ The doctors clearly viewed the donor as a model of normative masculinity, and his behavior in that regard seems to have been proof enough for them that his testicles were healthy.

As with Lichtenstern’s experiment the previous year, the donor testicle was divided lengthwise and each half was implanted in the patient’s stomach muscles. Unlike that previous experiment, the doctors needed to remove the patient’s remaining original testis before the operation was complete. Upon histological examination, Steinach and Lichtenstern declared that the extirpated testis “for the most part revealed degeneration (*Entartung*) of the tissue.”⁵⁴ Here the doctors’ terminology recalls the degeneration theory of homosexuality—*Entartung* was the German title of Max Nordau’s tract on degeneration (first published in 1892), and the term was

⁵² Ibid., 147; “Schnurrbart sehr spärlich und zart. Mächtig entwickelte, vorgewölbte Mammae von der Grösse und Art einer mittleren jungfräulichen Brust, breiter Warzenhof, rosa gefärbte Mamillae.”

⁵³ Ibid., 147; “Ein... verheirateter Landsturmmann mit völlig normalen Geschlechtstrieb”

⁵⁴ Ibid., 147; “ergibt die mikroskopische Untersuchung grossenteils Entartung der Gewebe.”

used frequently by Richard von Krafft-Ebing.⁵⁵ Although the degeneration theory of homosexuality was no longer broadly accepted in scientific circles by 1918—Krafft-Ebing, who had done much to foster the theory, had himself denounced it a decade and a half earlier—the idea of a general link between homosexuality and degeneration remained a strong one.⁵⁶ Moreover, degeneration theory was, like Steinach and Lichtenstern’s endocrinological theory, an explanation for homosexuality that relied heavily on biological determinism. In other words, degeneration was an important intellectual predecessor of the theory that Steinach and Lichtenstern hoped to advance, and their use of its terminology here would have primed the reader to consider homosexuality in a physiological light.

The reader thus prepared, the doctors went on to describe changes that seemed to have occurred as a result of their endocrinological intervention. They began with behavioral changes, which generally resembled those observed in Lichtenstern’s experiment. Less than two weeks after the operation, the patient reported having erections and erotic dreams; some four weeks after that he had sex with a female prostitute, and continued having heterosexual intercourse regularly “in the next weeks and months.” Here the doctors record that the patient experienced

⁵⁵ Max Simon Nordau, *Degeneration* (1892; New York: H. Fertig, 1968); Krafft-Ebing, *Psychopathia Sexualis*. On Krafft-Ebing’s rejection of the degeneration theory of homosexuality, see his “Neue Studien auf dem Gebiete der Homosexualität,” *Jahrbuch für sexuelle Zwischenstufen* 3 (1901): 1–36.

⁵⁶ Magnus Hirschfeld, for example, had recently elaborated his own take on the theory in his 1914 magnum opus, *Homosexuality in Men and Women*. There he argued that while homosexuals are not, strictly speaking, products of degeneration, they do function as nature’s way of *avoiding* degeneracy. As he put it “homosexuals, without being degenerates themselves, are a substitute for degeneration ... the nature of homosexuals serves as a preventative means against degeneration.” Hirschfeld, *Homosexualität*, 391 [451]. I discuss Hirschfeld’s view of degeneration more fully in chapter 4 of this dissertation.

“great satisfaction and happiness with that normalized feeling.”⁵⁷ Within a year of the procedure the patient had married a woman. He wrote to the doctors shortly after his marriage, telling them that “With my health I am doing quite well and my wife is very pleased with me.” The patient believed himself cured of his sexual inversion, writing that “today I am so far along that I think with disgust upon the time when I had that other passion.”⁵⁸

The apparent reversal of the patient’s homosexual urges seemed to confirm the validity of Steinach’s hypothesis, but the doctors were also keen to note signs of somatic masculinization in the weeks and months following the operation. The patient’s voice became louder and deeper; his arm muscles became stronger; his pubic hair “became coarser and thicker and spread up to his navel.”⁵⁹ Moreover, the patient’s “female secondary sexual characteristics (*Sexuszeichen*)—the mammarys and the breadth of the hips—gradually faded completely.”⁶⁰ In general, the doctors perceived the patient’s “*entire appearance*” to now make “*a distinctly masculine impression.*” As with the patient’s (perceived) pre-operative feminization, this post-operative masculinization was seen as providing evidence for Steinach’s theory of endocrinological sex; as the doctors put it, “The complete regression [of the patient’s feminine secondary sexual characteristics] can be explained by the inhibitory effect of the implanted masculine puberty

⁵⁷ Steinach and Lichtenstern, “Umstimmung der Homosexualität,” 147; “Es besteht grosse Befriedigung und Glücksgefühl über das normalgewordene Empfinden.”

⁵⁸ *Ibid.*, 147; “Mit meiner Gesundheit geht es mir sehr gut und meine Frau ist mit mir sehr zufrieden ... und heute bin ich so weit, dass ich mit Ekel an die Zeit denken, wo ich diese andere Passion hatte...” (Ellipses in original.)

⁵⁹ *Ibid.*, 147; “Die Schambehaarung ist gröber und dichter geworden und hat sich bis zum Nabel ausgebreitet.”

⁶⁰ *Ibid.*, 147; “die weiblichen sekundären Sexuszeichen, die Mammae und die Ausladungen der Hüften sind allmählich vollständig geschwunden.”

gland.”⁶¹ While the patient’s behavioral changes could potentially be explained as caused by psychological suggestion, the doctors believed that these physical changes provided unassailable proof of the correctness of their hypothesis.

This assumption only makes sense in the context of two beliefs. First, one must believe that sex is a spectrum rather than a binary. Second, one must also believe in the complete biological (and, more specifically, in the complete endocrinological) determination of gender and sexuality—that is, in my terminology, one must believe in the absolute ontological priority of sex over gender and sexuality. It is true that some of what the doctors observed conforms to what today’s medical science would expect to see. Assuming that the patient’s body didn’t immediately reject the donor tissue, some physiological changes would probably have occurred. It is possible that the transplanted testicle really did increase the quantity of testosterone (and other male gonadal hormones) in the patient’s blood to a minor degree, at least temporarily. As any trans person undergoing hormone therapy—or any woman going through menopause—can attest, changes to a person’s blood chemistry can produce quite dramatic physical alterations. It also seems clear that hormone therapy can produce emotional and behavioral changes, at least to a limited degree (although here it is quite difficult to rule out the possibility of additional variables).⁶² But these acknowledgements are a far cry from Steinach and Lichtenstern’s

⁶¹ Ibid., 147; “Die gänzliche Rückbildung aber ist durch die Hemmungswirkung der eingepflanzten männliche Pubertätsdrüse zu erklären.” Here Steinach and Lichtenstern also rely upon Steinach’s ‘doctrine of gonadal antagonism,’ which holds that the secretions of a gonad not only promote the growth of sexual characteristics associated with the gonad’s sex, but also suppress the characteristics associated with the opposite sex. Steinach had developed this theory in his earlier article, “Pubertätsdrüsen und Zwitterbildung” (1916). For more on this ‘doctrine,’ see Anne Fausto-Sterling, *Sexing the Body: Gender Politics and the Construction of Sexuality* (New York: Basic Books, 2000), 163–69; and Sengoopta, *Quintessence of Life*, 119–35.

⁶² See, for example, Linda M. Wesp and Madeline B. Deutsch, “Hormonal and Surgical Treatment Options for Transgender Women and Transfeminine Spectrum Persons,” *Psychiatric Clinics of North America* 40, no. 1 (March 1, 2017): 99–111; and Cecilia Dhejne et al., “Mental

assumption that such physical changes as a thickening of pubic hair or a deepening of voice give reliable evidence of a patient's erotic drive becoming more heterosexual. Today, under the common (at least to academic researchers) understanding of sex, gender, and sexuality, where these three things are thought of as independent (or semi-independent) phenomena, Steinach and Lichtenstern's assumption could never stand. But under an understanding of sex as ontologically prior to gender and sexuality, such an assumption makes sense. If sexual biology is believed to be a spectrum that is determinative of sexual desire, then it is reasonable to conclude that a strengthening of arm muscles indicates a biological shift in the male direction, and therefore that the patient has become more heterosexual. Under those conditions, it is sensible to think that losing pectoral fat means becoming straighter.

For Steinach and Lichtenstern, sex had ontological priority and gender had intellectual priority; this is revealed in the choice of data that they relay to us. All of their observations of changes in the patient concern attributes stereotypically connected to notions of masculinity.⁶³ Were these really the only changes that occurred to the patient following the operation? His testicle needed to be removed because of complications from tuberculosis—did any of those symptoms change after the procedure? We don't know, because the doctors don't tell us. Their silence here likely stems from symptoms of tuberculosis being far less connected to notions of

Health and Gender Dysphoria: A Review of the Literature,” *International Review of Psychiatry* 28, no. 1 (2016): 44–57. For a discussion of the ways that gender biases may affect seemingly-objective data about trans people, see Sari Irni, “On the Materialization of Hormone Treatment Risks: A Trans/Feminist Approach,” *Body & Society* 23, no. 2 (2017): 106–31.

⁶³ Cf. Robert Nye, *Masculinity and Male Codes of Honor in Modern France* (Oxford: Oxford University Press, 1993); George L Mosse, *The Image of Man: The Creation of Modern Masculinity* (Oxford: Oxford University Press, 1996); and Crouthamel, *An Intimate History of the Front*. Although it concerns the period after World War II, see also Roy Jerome, ed., *Conceptions of Postwar German Masculinity* (Albany: State University of New York Press, 2001).

masculinity than were reports of sexual activity. In other words, preconceptions of gender-typical behavior and physiology seem to have guided the doctors' focus, even as they putatively explained how their endocrinological intervention altered the patient's sexual behavior. Such intellectual priority of gender, when combined with a belief in the ontological priority of sex, shows how it was possible for the doctors to accept the existence of a great variety of *sexual* configurations, even while constricting their understanding to conform to the binary *gender* expectations of their day.

Reception of the Cure

Although Steinach and Lichtenstern were enthusiastic about their results, they nevertheless concluded their report on the first operation by cautioning that “we are far away from generalizing the proof, and completely removed from speaking of an operative cure for homosexuality.”⁶⁴ Still, the operation seems to have been met with intrigued appreciation by Steinach's fellow scientists. Although most concurred with Steinach and Lichtenstern's initial assessment that significantly more work needed to be done, the results seemed promising. For example, when examining Lichtenstern's 1924 book on testicle transplantation—which examines the cure for homosexuality at length—a *Journal of the American Medical Association* reviewer noted that, “While obviously a partisan, [Lichtenstern] inspires more confidence in his statement of clinical observations [of cures for homosexuality] than usually attaches to such reports.”⁶⁵

Lichtenstern would go on to perform the procedure—either under Steinach's supervision or

⁶⁴ Steinach and Lichtenstern, “Umstimmung der Homosexualität,” 147. “Trotz dieser Ergebnisse sind wir weit davon entfernt, den Beweis zu verallgemeinern und uneingeschränkt von einer operativen Heilbarkeit der Homosexualität zu sprechen.”

⁶⁵ Review of Robert Lichtenstern, *Die Überpflanzung der männlichen Keimdrüse*, *Journal of the American Medical Association* 84, no. 5 (January 31, 1925): 391.

alone—on perhaps eighteen more patients over the next several years.⁶⁶ (In all these cases, the surgery itself was performed by Lichtenstern; Steinach considered himself to be a poor clinician and reportedly never operated—on humans or on animals.⁶⁷) Other surgeons performed the procedure as well. In Berlin, Richard Mühsam and Heinrich Stabel operated on patients according to Steinach’s model; at least a few of Mühsam’s patients were referred to him by Magnus Hirschfeld.⁶⁸ In the United States, Max Thorek attempted the procedure once, although without success.⁶⁹

Even Sigmund Freud was quite taken with Steinach’s research. He concluded a 1920 work on female homosexuality with the observation that “When one compares the extent to which [psychoanalysis] can influence [homosexuality] with the remarkable transformations that Steinach has effected in some cases by his operations, it does not make a very imposing

⁶⁶ This count comes from Magnus Hirschfeld, who mentions the number in his pamphlet *Künstliche Verjüngung. Künstliche Geschlechtsumwandlung. Die Entdeckungen Prof. Steinachs und ihre Bedeutung* (Berlin: Johndorff & Co., 1920), 21. However, it is unclear from the context whether all of these were for cases of homosexuality, or whether some were for accidental loss of testicles. Lichtenstern himself details seven homosexual case studies in his 1924 monograph, including the initial case described above. It possible that he conducted other such operations after the publication of the book, and it is also possible that the book does not detail every single patient that he operated on prior to its publication, particularly given the gap between his number and Hirschfeld’s. See Lichtenstern, *Überpflanzung*, 84–109.

⁶⁷Eugen Steinach to Harry Benjamin, December 10, 1920, Box 1, NYAM. See also Benjamin, “Eugen Steinach, 1861–1944,” 436.

⁶⁸ Hirschfeld, *Künstliche Verjüngung*, 21 See also Richard Mühsam, “Die Einfluß der Kastration auf Sexual Neurotiker,” *Deutsche Medizinische Wochenschrift* 47, no. 6 (February 10, 1921): 155–56; and Richard Mühsam, “Über die Beeinflussung des Geschlechtslebens durch freie Hodenüberpflanzung,” *Deutsche Medizinische Wochenschrift* 46, no. 30 (July 22, 1920): 823–25.

⁶⁹ Max Thorek, *A Surgeon’s World: An Autobiography* (Philadelphia: Lippincott, 1943), 200. My attention was drawn to this source and a few of the above articles by Chandak Sengoopta, “Glandular Politics: Experimental Biology, Clinical Medicine, and Homosexual Emancipation in Fin-de-Siècle Central Europe,” *Isis* 89, no. 3 (1998): 445–73; and Sengoopta, *Quintessence of Life*.

impression.”⁷⁰ To be sure, Freud did not conceive of homosexuality in the same way that Steinach did: in the paragraph directly preceding the above quotation, Freud took to task those who “fail[] to distinguish clearly enough between the question of the choice of [sexual] object on the one hand, and of the sexual characteristics and sexual attitudes of the subject on the other, as though the answer to the former necessarily involved the answers to the latter.”⁷¹ (In other words, he criticized those who believed too strongly in the ontological priority of sex). And indeed, Steinach’s entire theory of homosexuality rested on just such a conflation between sexual biology and sexual object choice. Similarly, in a footnote added in 1920 to *Three Essays on the Theory of Sexuality*, Freud summarized Steinach’s research to that point, concluding that “It would be unjustifiable to assert that these interesting experiments put the theory of inversion on a new basis, and it would be hasty to expect them to offer a universal means of ‘curing’ homosexuality.”⁷² Nevertheless, Freud readily admitted that Steinach’s research had produced “very important results” and that Steinach had “in general thrown a bright light on the organic determinants of homo-eroticism and of sexual characters.”⁷³

Steinach’s most vocal and consistent supporter, however, was Magnus Hirschfeld. Hirschfeld, himself homosexual (although he did not publicly acknowledge it), had long advocated for a completely biological understanding of sexual inversion.⁷⁴ He argued throughout his numerous writings that only a biological understanding of homosexuality would provide a path to homosexual emancipation, because only bio-determinism could remove homosexuality

⁷⁰ Freud, “Psychogenesis,” 171.

⁷¹ *Ibid.*, 170.

⁷² Freud, “Three Essays,” 147n.

⁷³ Freud, “Psychogenesis,” 171; Freud, “Three Essays,” 147n, translation altered slightly.

⁷⁴ See, for example, Hirschfeld, “Objektive Diagnose”; or Hirschfeld, *Homosexualität*.

from the realm of choice, and hence of morality.⁷⁵ In Steinach's research Hirschfeld found confirmation of what he had long hypothesized on the basis of his own clinical experience with homosexual men and women. Steinach and Hirschfeld had apparently met each other shortly before the outbreak of the First World War, and the intellectual affinity between them was immediately evident to both scientists.⁷⁶ Steinach cited Hirschfeld's work soon afterward and the Berlin sexologist returned the favor by trumpeting Steinach's research in his own writings over the next several years.⁷⁷ In 1920 he even published a small pamphlet for a general readership that summarized the totality of Steinach's work to that point. There he wrote that Steinach and Lichtenstern had "paved the way for the intentional transformation of sexuality in human beings."⁷⁸

From a cursory glance, it may seem surprising that Hirschfeld would be such a strong supporter of Steinach. Even after most of the initial supporters of Steinach's research began to desert him—more on this below—Hirschfeld stayed loyal. Hirschfeld was a man who had long

⁷⁵ On this point, see chapter 4 of this dissertation.

⁷⁶ See Magnus Hirschfeld, "Die Untersuchungen und Forschungen von Professor E. Steinach über künstliche Vermännlichung, Verweiblichung und Hermaphrodisierung," *Jahrbuch für sexuelle Zwischenstufen* 17 (1917): 3–21.

⁷⁷ Steinach, "Pubertätsdrüsen und Zwitterbildung," 326–327n5. For examples of Hirschfeld writing about Steinach, see his "Operative Behandlung der Homosexualität," *Vierteljahresberichte des Wissenschaftliche-Humanitären Komitees / Jahrbuch für sexuelle Zwischenstufen* 17 (1917): 189–90; as well as the aforementioned "Untersuchungen und Forschungen von Steinach"; and *Künstliche Verjüngung*.

⁷⁸ Hirschfeld, *Künstliche Verjüngung*, 20; "Sie bahnten damit der Weg an, die willkürliche Umwandlung der Geschlechtlichkeit auch bei Menschen zur Tat werden zu lassen." Hirschfeld also mentioned Steinach in his 1920 preface to the second edition of *The Homosexuality of Men and Women*. There he proclaimed that Steinach's work would prove scientifically that "The decisive factor in contrary sexual feeling is therefore not, as *Ulrichs* believed, an *anima inclusa*, but rather a *glandula inclusa* [i.e., not a feminine soul, but rather a feminine gland]." Magnus Hirschfeld, *Die Homosexualität des Mannes und des Weibes*, 2nd ed. (Berlin: Louis Marcus Verlagsbuchhandlung, 1920), xiv.

accepted his own homosexuality, and who insisted that sexual inversion should be treated only through what he called “adjustment therapy”—which sought to introduce inverts into the queer subculture of Berlin and thus to encourage them to accept their homosexuality without guilt or shame.⁷⁹ Why would such a man not only promote, but even refer patients to surgeons who would perform, an invasive, operative ‘cure’ for a condition that he believed posed no medical, moral, or sociological danger?⁸⁰ The answer is complex, but it lies partly in the fact that Hirschfeld held the same belief in the ontological priority of sex that Steinach did (although it is less clear that gender held the same degree of intellectual priority for the Berlin sexologist as for Steinach). Hirschfeld advocated his “adjustment therapy” in part because he believed that there was nothing wrong with being gay, but also because he believed that the biological nature of homosexuality meant that any ‘cure’ rooted in psychology, religion, or sociology would be futile. Steinach’s technique offered a cure that fully aligned with Hirschfeld’s understanding of sexual inversion. (Of course, this is no accident, given that Steinach’s own conception of homosexuality had been greatly influenced by Hirschfeld’s earlier work.⁸¹) In other words, it seemed to Hirschfeld that this was a cure that might actually work. And while Hirschfeld continued to hold that there was no problem with being gay, it was nevertheless a fact that many of his patients

⁷⁹ See Hirschfeld, *Homosexualität*, chapter 23.

⁸⁰ Hirschfeld also argued forcefully against those who advocated the castration of homosexuals, and he did so in a way that would seem to undermine his support for Steinach’s theory. For example, in *Homosexualität*, he argued that “Supporters of castration proceed from the false premise that the seat of contrary sexual feeling lies in the genitals. If you want to surgically eliminate the offending organ, you will have to remove the brain.” *Ibid.*, 426 [488]. (Although Steinach had not yet published anything on homosexuality when *Homosexualität* was first released in 1914, this passage is still present in the second edition of 1920, which, as referenced in note 78, proclaimed in the new foreword for that edition that Steinach would prove Hirschfeld’s theories correct.)

⁸¹ Steinach, “Pubertätsdrüsen und Zwitterbildung,” 326–327n5.

experienced great emotional turmoil from their homosexuality—turmoil that could perhaps be addressed through Steinach’s technique. But most of all, Steinach’s ‘cure’ seemed to provide scientific proof of the correctness of Hirschfeld’s biological model of homosexuality, in which his entire campaign for gay liberation was rooted. Supporting Steinach simply made political sense.⁸²

Unfortunately for Hirschfeld, it became evident within a few years that the procedure would not provide the miracle cure for homosexuality that Steinach and his associates had hoped for. Although it seems likely that some of the reported initial effects of the procedure were not entirely due to psychological suggestion, certainly most of the reported changes, especially in behavior, were likely little more than the placebo effect in action. Even those effects that did occur could not have lasted very long—and all of this is for the patients whose bodies didn’t just reject the transplant outright.⁸³ By the mid-twenties, other medical doctors who reviewed the clinical data—both Steinach’s and those of other doctors—determined that there was no evidence of any long-lasting effect. Richard Mühsam, to whom Hirschfeld had referred patients, declared in 1926 that any results obtained from the procedure disappeared quickly, and that he had stopped performing the operation due to its lack of efficacy.⁸⁴ Although Max Thorek in the

⁸² On the relationship between Steinach and Hirschfeld, see also Sengoopta, “Glandular Politics.”

⁸³ Although medical doctors were well aware of the phenomenon of graft rejection (see, for example, Hirschfeld, *Künstliche Verjüngung*, 21), they lacked a good explanation for why it occurred. See also Simon LeVay, *Queer Science: The Use and Abuse of Research into Homosexuality* (Cambridge, MA: The MIT Press, 1996), 32.

⁸⁴ Richard Mühsam, “Chirurgische Eingriffe bei Anomalien des Sexuallebens,” *Die Therapie der Gegenwart* 67 (October 1926): 451–55. Incidentally, Steinach, who was always quick to take offense when his work was criticized, referred to Mühsam in a letter to Harry Benjamin written shortly before the publication of this article as one of “the stupid people” (*die Blödesten*). Eugen Steinach to Harry Benjamin, August 5, 1926, Box 1, NYAM.

United States seemed—even twenty years later—to agree with the theory behind the procedure, he noted that other surgeons had been unable to duplicate Steinach and Lichtenstern’s results. Thorek himself declined to pursue the procedure further after his own initial attempt failed.⁸⁵ E. Kreuter, one of Steinach’s earliest supporters, had lost faith with the technique by 1922, after his own results, and those that he found in the literature, suggested that any effects were temporary at best. If anything, most of the patients seemed to become *asexual* by a year or two after the operation. Kreuter even claimed to have conducted an experiment wherein he transplanted “a testicle of a heavy, genuine *homosexual*” donor into a castrated heterosexual man, in order to test Steinach’s claim. The patient’s sexual instinct “*remained unchangeably heterosexual.*”⁸⁶ For Kreuter, this was the final proof that Steinach’s hypothesis about homosexuality had been incorrect.

Arguments about the efficacy of the procedure notwithstanding, a significantly more robust opposition to Steinach’s hypothesis came from histologists. Steinach had performed histological examinations of some of the ‘homosexual’ testicles removed from his and Lichtenstern’s patients, and in 1920 he declared that these testes all contained large cells not found in the testes of “normal” testicles.⁸⁷ Dubbing these phenomena “F-Cells,” Steinach claimed that they closely resembled ovarian lutein cells, and was thus confident that they were

⁸⁵ Thorek speculated, however, that his failure may have been because he “did not castrate the individual as a preparatory measure.” Thorek, *A Surgeon’s World*, 198–200.

⁸⁶ E. Kreuter, “Hodentransplantation und Homosexualität,” *Zentrallblatt für Chirurgie* 49, no. 16 (April 22, 1922): 538–40; “einen Hoden eines schweren genuinen *Homosexuellen*”; “*Im übrigen ist sein Triebleben unverändert heterosexuell geblieben.*” It is not clear from the context whether the patient was aware of the precise nature of Kreuter’s experiment. On Kreuter’s early support for Steinach’s procedure, see his “Über Hodenimplantation beim Menschen,” *Zentrallblatt für Chirurgie* 46, no. 48 (November 29, 1919): 954–56.

⁸⁷ Steinach, “Histologische Beschaffenheit.”

the source of the female hormones (as well as of the reduced male hormones) that he believed to be responsible for homosexuality. Unfortunately for Steinach, no one else was able to find such cells in ‘homosexual’ testicles. Histologists called foul, arguing that whatever Steinach had seen in the testicles he examined, they certainly weren’t ovarian cells.⁸⁸ Even Hirschfeld was unable to find any F-Cells when he conducted his own histological examination.⁸⁹

For his part, Lichtenstern continued to vouch for the validity of masculinization through human testicular transplantation for at least nine years after his initial development of the technique. In the 1918 article co-authored with Steinach, the authors stressed that, for Lichtenstern’s initial patient, who lost his testes in combat, “*The restitution continues*” even two and a half years after the procedure.⁹⁰ Six years after that, in a monograph-length study of testicular transplantation, Lichtenstern reported that “every secondary sexual characteristic” of his initial patient “has been retained in their full extent.”⁹¹ Later in that monograph, Lichtenstern spent many pages detailing the procedure that he and Steinach had developed, proclaiming its success in curing homosexuality and defending the method from its detractors.⁹²

Despite the aforementioned approval given by Lichtenstern’s *JAMA* reviewer, by the time that the Vienna urologist published his monograph in 1924, it was clear—at least in Germany

⁸⁸ For a contemporary overview of the literature, see Benno Slotopolsky, “Über Sexualoperationen, ihre biologischen Grundlagen und ihre praktischen Ergebnisse,” *Klinische Wochenschrift* 7 (1928): 675–81.

⁸⁹ Hirschfeld, “Operative Behandlung der Homosexualität.” For more on the debate over F-Cells, see Sengoopta, *Quintessence of Life*, 80–82.

⁹⁰ Steinach and Lichtenstern, “Umstimmung der Homosexualität,” 146; “*Die Restitution dauert an.*”

⁹¹ Lichtenstern, *Überpflanzung*, 38–39; “alle sekundären Geschlechtsmerkmale... in vollem Maße erhalten geblieben sind.”

⁹² *Ibid.*, 84–109.

and Austria—that the evidence in support of the procedure was weak at best. Steinach, who had published his first work on rejuvenation in 1920, had himself already moved on, and he conducted no further research on the subject of curing homosexuality.⁹³ Steinach's letters to his associate Harry Benjamin from the early twenties make little or no mention of his work on homosexuality, although in at least one case in 1921 Steinach recommended that Benjamin treat cases of severe physical “eunuchoidism”—cases of (theoretically) diminished masculinity too severe for vasoligation to be effective—with a testicular transplant. Here he harkened back to the impetus behind Lichtenstern's 1915 procedure, although Steinach did not mention his associate's name.⁹⁴ In his intellectual autobiography, written in the late 1930s near the end of his life, Steinach greatly downplayed the research, and speculated in passing that there are likely many causes of homosexuality, glandular secretion being only one of them.⁹⁵

Hirschfeld too eventually fell silent. The whole episode proved a political liability; as the psychiatrist Kurt Blum noted at the time, the lack of proof for Steinach's hypothesis also cast doubt on Hirschfeld's theory of homosexuality, and therefore also on Hirschfeld's campaign for

⁹³ Eugen Steinach, “Verjüngung durch experimentelle Neubelebung der alternden Pubertätsdrüse,” *Archiv für Entwicklungsmechanik der Organismen* 46 (June 9, 1920): 553–618.

⁹⁴Eugen Steinach to Harry Benjamin, December 12, 1921, Box 1, NYAM. There is some other evidence that Steinach maintained an interest in the question of the etiology of homosexuality even after he stopped writing on the issue. Max Thorek recalls a conversation with Steinach in the early twenties in which Steinach referred to Arthur Weil's studies of homosexual men's physiques as confirming his own understanding of homosexuality. Thorek, *A Surgeon's World*, 198. The work referred to by Steinach was most likely either Arthur Weil, “Die Körpermaße der Homosexuellen als Ausdrucksform ihrer besonderen Veranlagung,” *Jahrbuch für sexuelle Zwischenstufen* 21, no. 3/4 (1921): 113–20; or Arthur Weil, “Sprechen anatomische Grundlagen für das Angeborensein der Homosexualität?,” *Archiv für Frauenkunde und Konstitutionsforschung* 10 (1924): 23–51.

⁹⁵ Steinach, *Sex and Life*, 91–92.

homosexual liberation.⁹⁶ By 1930, when Hirschfeld published the third volume of his mammoth *Geschlechtskunde* (Sexology), he printed but did not elaborate upon the following letter from a patient:

After my wife gave her consent, I underwent a bilateral castration. The operation was performed by a well-known surgeon, with the understanding that it would be followed later by the implantation of a testicle from a heterosexual man. As I was already over forty, the initial operation didn't have any dramatic effects. My voice and facial hair weren't affected. My sex drive declined in strength but didn't change its direction. I did lose my body hair, though. A year later the testicle of a heterosexual man was implanted in my abdominal cavity. My body hair began to regrow, but six months later it disappeared again. My sex drive gradually declined until it finally disappeared, but it never changed its direction. My desire to drink and use drugs did go away—I've been clean and sober for years now. So I achieved what I wanted. But I've been destroyed as a man: my drive and will-power are gone. I don't blame anyone—I asked for the procedure myself. But maybe I could have given up drinking if only my feelings of inferiority had been alleviated, by social or moral means. Steinach's transplants were much overrated in those days, even by doctors. I've researched the literature—there isn't one reported case of lasting improvement after a transplant.⁹⁷

In later years, even Harry Benjamin—by far Steinach's greatest advocate in the United States—seemed uncomfortable with the research. In his 1945 academic obituary of Steinach, Benjamin offered a rare criticism of his mentor, arguing that Steinach's "assumption of a purely endocrine etiology of sex inversion must be taken *cum grano salis*" in the light of understandings of homosexuality contemporary to the obituary. But even granting that the understanding of homosexuality at the time of Steinach and Lichtenstern's research was much different, Benjamin

⁹⁶ Kurt Blum, "Homosexualität und Pubertätsdrüse," *Zentrallblatt für die gesamte Neurologie und Psychiatrie* 31 (1923): 161–68; qtd. in Sengoopta, *Quintessence of Life*, 82. For more on the intersection of Hirschfeld's science and politics, see Sengoopta, "Glandular Politics"; Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom*; and Laurie Marhoefer, *Sex and the Weimar Republic: German Homosexual Emancipation and the Rise of the Nazis* (Toronto: University of Toronto Press, 2015), chapters 1, 3.

⁹⁷ Magnus Hirschfeld, *Geschlechtskunde* (Stuttgart: Julius Püttmann, 1926–30), 3:537; translation from LeVay, *Queer Science*, 32.

concludes that their “generalization [was] hardly justified.”⁹⁸ In 1970, when Benjamin published a short essay reminiscing about the various sexological luminaries with whom he had worked, Steinach’s research on homosexuality went completely unmentioned.⁹⁹

In the end, Steinach’s search for a cure for homosexuality can only be regarded as a complete failure, a conclusion that is unlikely to surprise readers in the present day. By a decade after Steinach and Lichtenstern’s initial 1918 publication, no major scientist considered the theory credible. But the fact that the theory was considered *plausible*, even *promising*, in the wake of the initial research—as well as the fact that Steinach even came up with the idea in the first place—tells us much about the way that he, and many others at the time, saw in the production of sex hormones a biological structure that determines human gender and gendered behavior.

In her examination of Steinach’s research, Anne Fausto-Sterling argues that Steinach’s “focus on homosexuality” provides convincing evidence that his research agenda was shaped significantly by the “political debates” of his day.¹⁰⁰ This is a reasonable interpretation, but in contrast to Fausto-Sterling, I am inclined to think that Steinach’s impulses here result less from the overt influence of contemporary political debate, and more from a simple deficit in his willingness, or even his ability, to question the gender norms of his society. Such an attitude of unquestioning adherence to prevailing gender norms can also be found in his next major project, a search for an endocrinological cure for old age. Here he expanded even further on his belief in

⁹⁸ Benjamin, “Eugen Steinach, 1861–1944,” 433.

⁹⁹ Harry Benjamin, “Reminiscences,” *The Journal of Sex Research* 6, no. 1 (February 1970): 3–9. However, Steinach’s other research, particularly on rejuvenation, receives significant attention in this piece.

¹⁰⁰ Fausto-Sterling, *Sexing the Body*, 162.

the power of hormones to produce—or revive—gender-typical behavior. And unlike his research on homosexuality, his work on rejuvenation would bring him not only worldwide criticism, but also worldwide acclaim.

A Restoration of Virility

In the early 1920s, the Hungarian-American surgeon Max Thorek visited Steinach in Vienna in order to learn the secrets of the Viennese endocrinologist's newly-famous 'vasoligation' technique. According to Thorek, when he and Steinach visited a horse race together, "The famous man attracted almost as much attention as the horses. He was of Jovian appearance, with a luxuriant beard of superb Titian hue that fell to the middle of his vest. He had been greatly publicized and adoring crowds pointed him out and gazed at him—he looked as if he might be the man who had solved the Sphinx's riddle of rejuvenation."¹⁰¹ Over the next decade Steinach would become a scientific celebrity in Europe and perhaps especially in the United States. Newspapers throughout the western world hailed him as a man who had solved the problem of old age, and who could return sexy vitality and vigor to the elderly.¹⁰² All one had to do was undergo a simple 'vasoligation' procedure, more commonly known as a 'Steinach operation' or 'rejuvenation.'

By the late 1910s, Steinach had come to believe that there is a direct connection between low levels of sexual hormones and the extent to which one suffers from many of the effects of

¹⁰¹ Thorek, *A Surgeon's World*, 186.

¹⁰² Indeed, as Nikolai Kremmentsov reports, Steinach's work even enjoyed a brief vogue in communist Russia, particularly under the New Economic Plan. See Nikolai Kremmentsov, "Hormones and the Bolsheviks: From Organotherapy to Experimental Endocrinology, 1918–1929," *Isis* 99, no. 3 (2008): 486–518; and Nikolai Kremmentsov, *Revolutionary Experiments: The Quest for Immortality in Bolshevik Science and Fiction* (Oxford: Oxford University Press, 2014), chapter 5.

old age.¹⁰³ Vasoligation was designed to address those effects. (Clearly, the impulse behind Brown-Séguard's search for a gonadal fountain of youth had not lessened in the intervening decades.¹⁰⁴ As George Viereck put it in his pseudonymously-published book of Steinach-boosterism, "Steinach made the remarkable discovery that the Fountain of Youth, for which men have scoured five continents in vain, is not without, but within us.")¹⁰⁵ Like a unilateral vasectomy, vasoligation works by severing one of a patient's vasa deferentia—the tubes that transport sperm from the testicles to the ejaculatory ducts. However, whereas vasectomies involve the ligation of *both* vasa deferentia, with the aim of sterilizing the patient, the Steinach operation ligated only a single vas deferens, sterilizing the operative testis, but leaving the other testicle (and any reproductive capacity it possessed) unaffected. The unilateral sterilization caused the germinal (sperm-producing) cells within the operative testicle to atrophy, but it allegedly allowed for a subsequent proliferation of the testicle's interstitial (hormone-producing) cells, which would grow into the empty space left by the atrophied germinal cells. With that proliferation of interstitial cells would come an increase in the quantity of gonadal hormones supplied to the blood for circulation throughout the body, leading, in theory, to a reduction in the effects of old age. In sum: Steinach believed that sterilized testicles produce more male sex hormone than 'normal' testes, and the vasoligation technique was designed to apply this theory

¹⁰³ According to his autobiography, Steinach had first began to think about this subject as early as 1912—around the time of his first transplantation experiments. He claims to have submitted in that year a paper titled "Investigation of Youth and Age" to the Austrian Academy of Sciences. However, the paper was not published, and any copies of it were likely destroyed by the Nazis along with most of the rest of Steinach's papers. Steinach, *Sex and Life*, 107.

¹⁰⁴ Cf. Nicole L. Miller and Brant R. Fulmer, "Injection, Ligation and Transplantation: The Search for the Glandular Fountain of Youth," *The Journal of Urology* 177, no. 6 (June 1, 2007): 2000–2005. See also Laura Davidow Hirshbein, "The Glandular Solution: Sex, Masculinity, and Aging in the 1920s," *Journal of the History of Sexuality* 9, no. 3 (2000): 277–304.

¹⁰⁵ Corners [Viereck], *Rejuvenation*, 6.

in a minimally invasive manner. The procedure is no longer performed today, but the same basic principle—that of therapeutically increasing the supply of sexual hormones to the body—still applies to some present-day clinical practices, such as the use of estrogen patches to treat the symptoms of menopause.¹⁰⁶

Steinach conceived of this project in explicitly gender-normative terms. Although many of the putative benefits of the procedure (reduced hypertension, increased musculature, reinvigorated hair growth, etc.) fall under the umbrella of what we today would consider to be

¹⁰⁶ I am not particularly concerned with evaluating the correctness of Steinach's claims *vis-à-vis* the state of medical knowledge at the present; as I am not a biologist or medical doctor, such statements go beyond my area of expertise. Nevertheless, I can imagine that readers may wonder, in this particular case, whether Steinach was actually on to something, or whether any observed results were merely a product of the placebo effect. As near as I can tell, the short answer right now is that we don't really know. Recent research on rats indicates that sterilized testicles *do* produce slightly higher levels of testosterone, at least in the short term. However, such increases are rather small, and unlikely to be of much clinical significance. If Steinach's theory were correct, then one would expect that vasectomy patients today would experience at least some increase in testosterone production, but I am not aware of any data detailing whether this occurs. (However, it is common practice to inform patients considering a vasectomy that their testosterone levels will not *decrease*.)

All in all, it appears that Steinach may indeed have been at least partially correct—testicular sterilization does appear to effect a small increase in testosterone production, at least temporarily—but whether that increase has any clinically significant consequences, especially in humans, remains an open question. It seems certain, however, that vasoligation patients' postoperative reports must have been heavily influenced by the placebo effect, regardless of whether any significant endocrine change occurred.

For examples of recent research relevant to this issue, see Terry T. Turner, Hyun J. Bang, and Jeffrey J. Lysiak, "Experimental Testicular Torsion: Reperfusion Blood Flow and Subsequent Testicular Venous Plasma Testosterone Concentrations," *Urology* 65, no. 2 (2005): 390–94; Longquan Ren et al., "Effect of Short Period Vasectomy on FSH, LH, Inhibin and Testosterone Secretions, and Sperm Motility in Adult Male Rats," *Experimental Animals* 60, no. 1 (2011): 47–56; and Duru Fio, Ajayi S, and Azu Oo, "The Effect of Unilateral Vasectomy on Testosterone and Testicular Parameters in the Adult Male African Giant Rat (*Cricetomys gambianus*)," *African Health Sciences* 13, no. 2 (June 2013): 483–89. For a historical analysis written by medical doctors, see J. Jara and E. Lledó, "Historical Approach to the Surgical Treatment of Erectile Dysfunction," *Actas Urológicas Españolas (English Edition)* 37, no. 7 (July 1, 2013): 445–50. My thanks to Jeffrey Lysiak and Ryan Smith, professors of urology at the University of Virginia, for discussing this issue with me and for pointing me toward most of the articles cited in this note.

physical effects, Steinach generally preferred to publicize the supposedly far-ranging behavioral changes of vasoligation patients. In one case, recounted in his autobiography, a patient “who was completely ruined financially five years ago” was able to rebuild his livelihood and “attain to a brilliant position.”¹⁰⁷ In other words, because of the Steinach operation, the patient was able to reclaim his manly role within the capitalist order as a provider and competitor. This impulse was present in Steinach’s thinking on rejuvenation from the beginning. In his first article on the subject (published in 1920), Steinach began by summarizing his animal gonadal transplant experiments of the previous decade and reiterating his ability to create “feminized males” and “masculized females.”¹⁰⁸ As in his work on animal transplantation, the endocrinologist was keen to note that not only the bodies but also the “psyches” of his test animals displayed masculine or feminine “erotization.” However, as with his work on homosexuality, Steinach hoped with this project to increase the biological maleness of those whom he considered to already be in the ‘male’ band of the sexual spectrum. Indeed, Steinach’s spectral thinking was more on display than ever: when summarizing his previous research, he declared that “In this way one can experimentally bring out an entire stepladder of somatic and functional sexual characteristics.”¹⁰⁹

Steinach’s rejuvenation project demanded a radical reconceptualization of old age.¹¹⁰ His initial research question presupposed an endocrinological link between youth and sex. He asked:

¹⁰⁷ Steinach, *Sex and Life*, 175–76. The surgeon for this operation, which was conducted independently of Steinach’s oversight, was Peter Schmidt of Berlin.

¹⁰⁸ Steinach, “Verjüngung,” 557.

¹⁰⁹ *Ibid.*, 562; “Man kann auf diese Weise experimentell eine ganze Stufenleiter der somatischen und funktionellen Geschlechtscharaktere herausarbeiten.”

¹¹⁰ In this respect, Steinach’s research is highly relevant for the field of age studies. See, for example, Heiko Stoff, *Ewige Jugend: Konzepte der Verjüngung vom späten 19. Jahrhundert bis ins Dritte Reich* (Cologne: Böhlau, 2004). On this subject in American history, see in particular Corinne T. Field, *The Struggle for Equal Adulthood: Gender, Race, Age, and the Fight for Citizenship in Antebellum America* (Chapel Hill: University of North Carolina Press, 2014); and

“Is it possible, through regeneration [*Neubelebung*] of old puberty glands, to call out the attributes of youth in an individual once again or repeatedly? Is rejuvenation possible?”¹¹¹ Of course, the association between sex and youth is likely as old as humanity, but Steinach pushed the logic of this idea well beyond the norm. Steinach’s endocrinological gaze transformed the process of aging into a process of un-sexing, or of androgynization. That is to say: just as his earlier work postulated that homosexual men are biologically, and quantifiably, less masculine than ‘normal’ men, Steinach here argued that old people become quantifiably less sexed than they had been in their youth.¹¹² In doing so, he reconfigured old age as a deficit of sexual hormones. Or, as Viereck put it, “We are what our glands make us. Man is as young as his glands. He is, in fact, the slave of his glands.”¹¹³

In his later writings Steinach became even more explicit on this point:

Even in the course of a normal life, periods may occur during which expression of the sex character appears to be indistinct and the special characteristics blurred, not to the same degree as in the eunuch or eunuchoid, but still to a degree that suggests the relation of a hasty sketch to the finished picture. These are the phases of childhood and old age. What applies to the period of immaturity also applies to the period of senility, for at this period everything that is typically male or female becomes colourless and indistinct. Just as it is

Corinne T. Field and Nicholas L. Syrett, eds., *Age in America: The Colonial Era to the Present* (New York: New York University Press, 2015)

¹¹¹ Steinach, “Verjüngung,” 562; “Ist es möglich, durch Neubelebung der alternden Pubertätsdrüse die Attribute der Jugend noch einmal oder wiederholt im Individuum hervorzurufen? Ist Verjüngung möglich?”

¹¹² Otto Weininger makes a similar comment in passing in *Sex and Character*, observing that in older men there is “a reappearance... of latent amphisexuality alongside the senile atrophy of the sexual characteristics that developed unidirectionally in their prime.” As I mentioned in chapter 2 (in the context of a note observing that Weininger had *also* predicted the importance of a gonad-swapping experiment similar to the one that Steinach performed on his guinea pigs), I know of no references to Weininger in Steinach’s work, or any direct evidence that Steinach was particularly familiar with his work. However, the overlap of their ideas—whether coincidental or not—is quite striking. Weininger, *Sex and Character*, 44. On Weininger, see chapter 1 of this dissertation; for specific discussion of the overlap between his thought and Steinach’s, see chapter 1, note 36, and also chapter 2, note 66.

¹¹³ Corners [Viereck], *Rejuvenation*, 9

often difficult to distinguish between the face of a little girl and that of a little boy, so the shaved face of an old man resembles that of an old woman. Even the difference in the voice is less marked in old age, the female voice growing deeper, whereas the male voice is apt to acquire a higher pitch as the years advance. The beard, too, is then no longer the distinguishing mark of the male, since in old age hair frequently grows on the female chin and upper lip. And naturally, temperament and disposition too begin to lose their typical expression for the different sexes, the old man revealing only traces of his former masculine aggressiveness and the old woman but a feeble remnant of her former modest timidity and yielding gentleness.¹¹⁴

This passage is accompanied by two photographs: one of Steinach himself, bearded and imperious, and one of an “Aged South American male Indian.” The caption of the latter picture explains that the photo is “An illustration of the difficulty in differentiating between man and woman in advanced age” (see fig. 3.2). Curiously, Steinach doesn’t seem to have any fears that he himself would be similarly regarded as an elderly “eunuchoid.” Perhaps he viewed his own masculinity as unquestionable, in contrast to that of an anonymous aborigine.¹¹⁵ (Here Steinach is clearly drawing, if perhaps unconsciously so, upon the sexological tradition of viewing non-white peoples as possessing less sexual differentiation than white people.)¹¹⁶

¹¹⁴ Steinach, *Sex and Life*, 8–9. The term ‘eunuchoid’ indicated a man who had not necessarily been castrated but who nevertheless displayed some characteristics thereof. See Harry Benjamin to Eugen Steinach, December 7, 1921, NYAM; and Steinach to Benjamin, December 12, 1921, NYAM.

¹¹⁵ I do not know whether Steinach himself underwent a vasoligation procedure. In his obituary of Steinach, Harry Benjamin notes offhandedly that Steinach possessed a “powerful vitality, which he retained to the last (for he fought senility in himself as he had fought it in others).” This implies that the endocrinologist did indeed have his own procedure performed on himself, although the evidence is not conclusive. Benjamin, “Eugen Steinach, 1861–1944,” 442.

¹¹⁶ On this tradition in Britain, and especially in the work of Havelock Ellis, see Julian Carter, “Normality, Whiteness, Authorship: Evolutionary Sexology and the Primitive Pervert,” in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1996), 155–76.

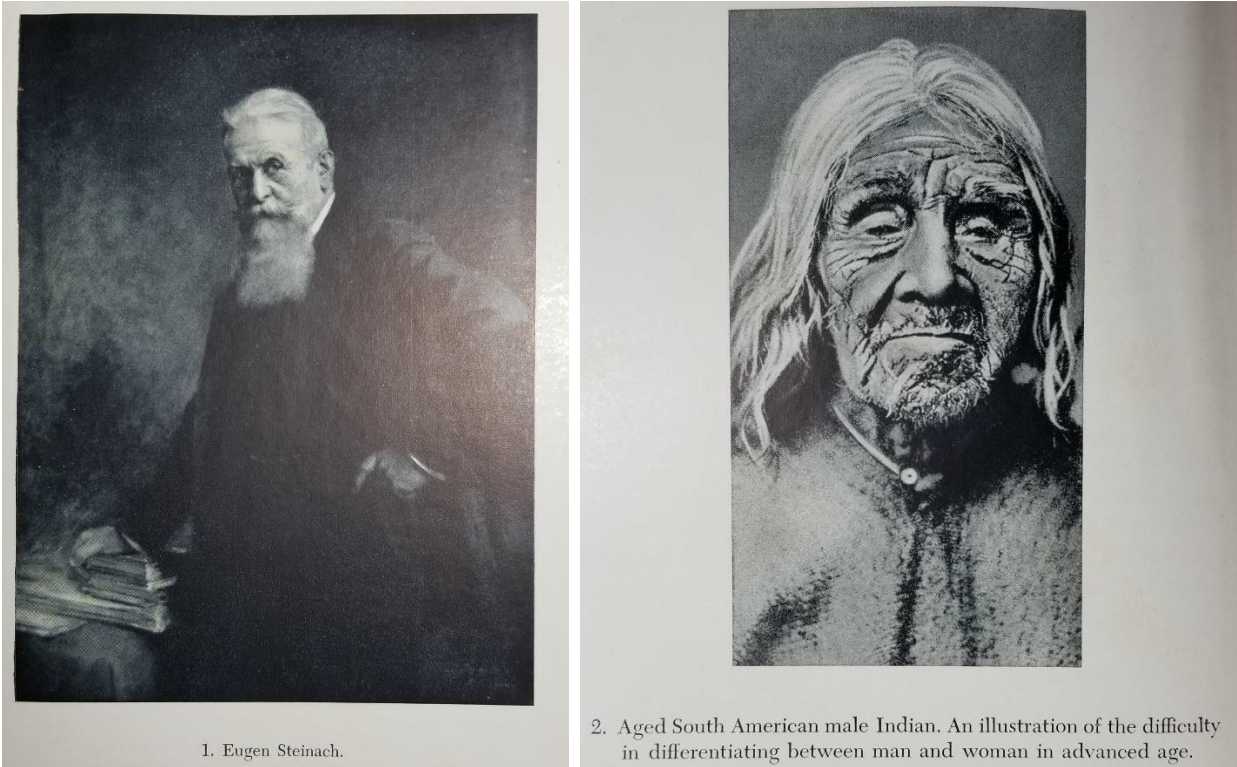


Figure 3.2: These photos accompany the above passage in Steinach's autobiography *Sex and Life*.¹¹⁷

It is critical to note that Steinach defined “senility” not only as a diminution in what he regarded as the physical sexual characteristics, but also in the “psychic” sexual characteristics. This can be seen already in the above passage, where Steinach correlates an old man’s higher voice with a loss of assertiveness, and an old woman’s facial hair with a loss of timidity. Elsewhere, the doctor describes a patient, a fifty-year-old man who had been previously (and, in Steinach’s view, incorrectly) diagnosed with rheumatism. In Steinach’s description, the man suffered from physical symptoms such as high blood pressure and testicles that were “rather flabby in appearance”; but the patient also suffered from “general fatigue, incapacity to work, tremulous handwriting, weakened memory, and sexual impotence.” Steinach diagnosed the patient as suffering from “genuine premature senility” and performed a vasoligation; the patient

¹¹⁷ Steinach, *Sex and Life*, between 8 and 9.

apparently improved dramatically within a year—for example, his handwriting became “faultless.”¹¹⁸ Here we see just how deep Steinach’s biological determinism (or his ontological priority of sex) ran: even handwriting became a direct product of sexual biology. Man had indeed become a slave to his glands.¹¹⁹

In later years, Steinach would complain that the public (and especially unscrupulous journalists) had associated his rejuvenation work unfairly with the idea of libertines trying to reclaim the ability to copulate.¹²⁰ (Such accusations, as we have seen, were also thrown at Brown-Séquard.¹²¹) Steinach preferred to focus on the restitution of one’s mental abilities and general energy, and he denigrated the restoration of “the sexual impulse” as being neither “the principal result of reactivation nor even one of very great importance.”¹²² However, given how the Viennese endocrinologist defined his project—as a literal restitution of one’s quantifiable sexual biology (in later years he measured the effectiveness of masculine hormone in “cock units,” and the effectiveness of female hormone in “mouse units”)—and given that Steinach

¹¹⁸ Eugen Steinach, “Biological Methods against the Process of Old Age,” *Medical Journal and Record* 125 (1927): 77–81 & 161–64, at 81.

¹¹⁹ Steinach was not alone in suggesting that a person’s handwriting is directly tied to their sexual biology. Similar references can also be found in Hirschfeld’s work—for example, in the questionnaires that he had his patients fill out. “Psychobiologischer Fragebogen,” Magnus Hirschfeld Collection, Box 1, Sec. IX, p. 34, Kinsey Archive, Indiana University. Similarly, in Lili Elbe’s trans memoir *Man into Woman*, Elbe records a remarkable transformation of her handwriting following her first sexual reassignment therapy. Lili Elbe, *Man into Woman: An Authentic Record of a Change of Sex*, ed. Niels Hoyer, trans. H. J. Stenning (1931; London: Jarrolds, 1933), 131.

¹²⁰ Harry Benjamin reports that Steinach liked to show his visitors “a letter which he had received from a Swedish clergyman who had threatened him with Hell and damnation if he continued any longer to interfere with the divine laws of nature.” Benjamin, “Eugen Steinach, 1861–1944,” 438.

¹²¹ See chapter 2 of this dissertation.

¹²² Steinach, *Sex and Life*, 136.

himself regarded impotence as a sign of diminished masculinity (see above), it is hardly surprising that his work on rejuvenation was understood in that light.¹²³ (Indeed, it is worth noting that one of the major physiological advantages that Steinach claimed accrued from the procedure, a reduction in hypertension, was also the original purpose for which Viagra was designed.¹²⁴) Such perceived misunderstanding of his work was to become a point of much consternation for him over the next several years.

Celebrity and Its Discontents

Although the total number of males who underwent vasoligation probably numbered only in the thousands or tens of thousands, the Steinach operation nevertheless managed to achieve a prominent place in the public imagination, thanks in part to enthusiasm from the sensationalist press.¹²⁵ Focus on Steinach was not absent from intellectual circles either. Sigmund Freud

¹²³ *Ibid.*, 211.

¹²⁴ Steinach, “Biological Methods,” 78. On Viagra, see the original patent for the drug, which frequently mentions hypertension and angina but never mentions erectile dysfunction or impotence: A.S. Bell, D. Brown, and N.K. Terrett, Pyrazolopyrimidinone antianginal agents, U.S. Patent 5,250,534 A, filed May 14, 1992, and issued October 5, 1993 (viewable online at <https://www.google.com/patents/US5250534>). See also Meika Loe, *The Rise of Viagra: How the Little Blue Pill Changed Sex in America* (New York: New York University Press, 2004).

¹²⁵ See, for example, “Dr. Steinach Coming to Make Old Young,” *The New York Times*, February 9, 1922; see also Corners [Viereck], *Rejuvenation*; and Norman Haire, *Rejuvenation: The Work of Steinach, Voronof, and Others* (London: G. Allen & Unwin, 1924). Rejuvenation procedures, which included the ‘Steinach’ operation as well as other even more scientifically suspect operations (such as Sergei Voronoff’s procedure of implanting monkey testicles into men), were practiced somewhat widely throughout the 1920s and early 1930s, with the first vasoligation performed on a human in 1918 (Lichtenstern performed the surgery). Steinach, *Sex and Life*, 167. The procedures eventually died out owing in part to a lack of verification. (Unsurprisingly, the placebo effect was particularly strong following these operations.) With the successful isolation and synthetization of testosterone in 1935, the procedures became unnecessary. On the history of rejuvenation procedures in the 1920s and 1930s, see Sengoopta, *Quintessence of Life*, chapter 3; Michael A. Kozminski and David A. Bloom, “A Brief History of Rejuvenation Operations,” *The Journal of Urology* 187 (March 2012): 1130–34; and John B.

reported to George Viereck that the Steinach operation “makes life more livable.” Although Freud, typically morose, hastened to add that “It does not make life worth living,” he himself underwent the operation in 1926, apparently out of the hope that it might allay his jaw cancer.¹²⁶ W. B. Yeats had a ‘Steinach’ in 1934; three years later, he wrote in a letter that the operation had “revived” his “creative power” and “it revived also sexual desire; and that in all likelihood will last me until I die.”¹²⁷ One notable woman to undergo a rejuvenation procedure was the American author Gertrude Atherton, whose 1923 novel *Black Oxen* centers on a middle-aged woman who is miraculously transformed into a seemingly-young sexpot after undergoing a female version of the Steinach procedure.¹²⁸ *Black Oxen* may have been the most popular American novel of its year, and it was quickly made into a movie.¹²⁹ In a manner similar to

Nanninga, *The Gland Illusion: Early Attempts at Rejuvenation through Male Hormone Therapy* (Jefferson, North Carolina: McFarland & Company, 2017).

¹²⁶ Viereck, *Glimpses of the Great*, 27. Many years later, Harry Benjamin recalled a personal conversation with Freud where the psychoanalyst confided that he was quite pleased with the results of the operation, but he asked Benjamin not to reveal this fact until after his death. See Benjamin, “Reminiscences,” 7.

¹²⁷ See Stephen Lock, “‘O That I Were Young Again’: Yeats and the Steinach Operation,” *British Medical Journal* 287, no. 6409 (December 24, 1983): 1964–68.

¹²⁸ Gertrude Atherton, *Black Oxen* (New York: Boni and Liveright, 1923). Because it involved the severing of a vas deferens, vasoligation could only be performed on males. Although the principle of Steinachian rejuvenation was not sex specific, differences between the vasa deferentia and the fallopian tubes, and also between the respective operations of the testicles and the ovaries, meant that vasoligation could not be performed on females. Although Steinach and some of his affiliates (particularly Harry Benjamin) developed a few female variants on the procedure, such as the selective administration of X-Rays to one or both ovaries, all of their attempts suffered from increased difficulty, increased risk of complications, and decreased efficacy. (See Eugen Steinach to Harry Benjamin, March 29, 1922, Box 1, NYAM.) When combined with cultural factors that discouraged women from seeking such operations (which were always connected to the idea of restoring youthful sexuality, even if Steinach himself tried to combat such associations), this meant that very few women underwent any of the female variants of the Steinach procedure. See Benjamin, “Eugen Steinach, 1861–1944”, at p. 439; and Sengoopta, *Quintessence of Life*, 92–94.

¹²⁹ On *Black Oxen*, see Julie Prebel, “Engineering Womanhood: The Politics of Rejuvenation in Gertrude Atherton’s *Black Oxen*,” *American Literature* 76, no. 2 (2004): 307–37; and Anne

Freud and Einstein, Steinach was often thought of in these years as one of those Jewish scientists who had upended everything that people thought they understood about the world. As a 1931 poem put it:

Three men attract the world's awe:
The first has stormed the firmament,
The second searched the depths of souls,
The third made aging bodies frail no more.

And all while still alive can be
Dead sure of immortality.
But hark, what roars that choir of yore?
The Jews are always pushing fore!

Drei Männer bilden das Staunen der Welt:
Der erste stürmte das Himmelzelt,
Der zweite der Seele Tiefen durchforscht,
Der dritte den alternden Leib entmorscht.

Und alle sind schon bei Lebenszeit
Todsicher ihrer Unsterblichkeit.
Was aber brüllt der alte Chor?
Die Juden drängen sich überall vor!¹³⁰

Morey, “‘The Gland School’: Gertrude Atherton and the Two *Black Oxen*,” *Framework* 54, no. 1 (2013): 59–76. In addition to *Black Oxen*, a number of other literary works from this time featured rejuvenation as a major theme, although they generally focused on the more dramatic concept of (human or non-human) gland transplantation. Such works include the Sherlock Holmes story “The Adventure of the Creeping Man” (1923). A few Spanish novels from the twenties also used rejuvenation theories as a major plot point. Itziar Rodriguez de Rivera, “Portable Masculinities: Gland Grafting in Spanish Popular Novels of the 1920s,” paper presented at the Annual Conference of the Northeast Modern Language Association, Baltimore, MD, March 26, 2017. On rejuvenation in popular literature, see Brett A. Berliner, “‘Gods We Were’: Rejuvenation as Social Metaphor in Interwar Pulp Fiction in Europe and the United States,” *Interdisciplinary Humanities* 30, no. 1 (Spring 2013): 101–12.

¹³⁰ Quoted in Klaus Taschwer et al., *Experimental Biology in the Vienna Prater: On the History of the Institute for Experimental Biology 1902 to 1945* (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2016), 39; their translation, slightly altered. The joke of the final line is that the anti-Semitism of the general public prevents them from appreciating the work of these Jewish scientists.



Figure 3.1: A caricature from 1931, which accompanied the poem above¹³¹

For his part, Steinach had, at best, a contentious relationship with his celebrity. He was often hostile to popular press accounts of his technique, which he regarded as invariably sensationalistic and unscientific, even—indeed, often especially—when they were enthusiastic about his procedure.¹³² In 1922, a German movie, commonly known as ‘the Steinach film,’ claimed to portray the results of vasoligation, and was a popular success.¹³³ Nevertheless, as

¹³¹ Artist unknown, in *ibid.*, 39.

¹³² For examples of popular English-language publications concerning ‘rejuvenation,’ see Corners [Viereck], *Rejuvenation*; Haire, *Rejuvenation: The Work of Steinach, Voronof, and Others*.

¹³³ Curt Thomalla, *Der Steinachfilm*, dir. Curt Thomalla (Austria, 1923). Copies of two versions of the film, as well as censorship detail and contemporary commentary, can be found in the Filmarchiv of the Bundesarchiv. For more on *Der Steinachfilm*, see Rainer Herrn and Christine N. Brinckmann, “Von Ratten und Männern: *Der Steinach-Film*,” *Montage AV* 14, no. 2 (2005): 78–100; and Maria Makela, “Rejuvenation and Regen(d)eration: *Der Steinachfilm*, Sex Glands, and Weimar-Era Visual and Literary Culture,” *German Studies Review* 38, no. 1 (February 3, 2015): 35–62.

Benjamin reported in Steinach's obituary, and despite the fact that the producers made "an authorized scientific version" in addition to the one shown in public theaters, the Vienna physiologist "was raving mad" and denied having given consent to the film or having had anything to do with it.¹³⁴ Steinach's letters to Benjamin throughout this period similarly reveal a man obsessed with his image. He frequently accused Benjamin of misrepresenting him in the latter's publications and lectures,¹³⁵ and wrote at length about the proper terminology to use when describing vasoligation. Already in 1922, only a year or so after they had begun corresponding, Steinach wrote to Benjamin, telling him that he now regarded the term "rejuvenation" as an unfortunate choice, because it seemed to him to carry implications of sexual promiscuity and overblown promises that the operation constituted a surgical fountain of youth. He instead suggested that Benjamin use the terms "regeneration" or "restitution" (*die Regeneration / die Restitution*).¹³⁶ Benjamin obeyed Steinach's request, suggesting in a lecture given six months later that the above terms, or perhaps also "reactivating" or "reenergizing,"

¹³⁴ Benjamin, "Eugen Steinach, 1861–1944," 437.

¹³⁵ See, for example, Eugen Steinach to Harry Benjamin, February 21, 1922, Box 1, NYAM; Eugen Steinach to Harry Benjamin, February 26, 1922, Box 1, NYAM; Steinach to Benjamin, March 29, 1922, Box 1, NYAM; Steinach to Benjamin, August 5, 1926, Box 1, NYAM; Eugen Steinach to Harry Benjamin, February 21, 1922, Box 1, NYAM; Eugen Steinach to Harry Benjamin, February 26, 1922, Box 1, NYAM; Steinach to Benjamin, March 29, 1922, Box 1, NYAM; Steinach to Benjamin, August 5, 1926, Box 1, NYAM; Eugen Steinach to Harry Benjamin, July 27, 1930, Box 2, NYAM; and Eugen Steinach to Harry Benjamin, August 24, 1930, Box 2, NYAM.

¹³⁶ Eugen Steinach to Harry Benjamin, January 7, 1922, Box 1, NYAM. 'Rejuvenation' (*Verjüngung*) was the term initially proposed by Steinach for the procedure, but he quickly came to regret the term, possibly thanks to the intercession of Max Thorek. However, his efforts to change the name of the procedure were mostly unsuccessful. See Thorek, *A Surgeon's World*, chapter 16; Steinach, "Verjüngung"; and Harry Benjamin, "The Effects of Vasectomy (Steinach Operation)," *American Medicine*, n. s., XVII, no. 8 (August 1922): 435–43, at 437. See also Steinach, *Sex and Life*, 10–11, where Steinach makes a final plea for "reactivation" instead of "rejuvenation."

would describe the procedure more accurately.¹³⁷ Unsurprisingly, such terms failed to catch on; Benjamin would later blame “a sensation-hungry press and public” as well as “vaudeville comedians” who conflated Steinach’s technique with the “monkey gland” approach of Serge Voronoff.¹³⁸

Above all, Steinach was bothered by the possibility that his fellow scientists would regard him as a quack. And while this fear was not unfounded—many of them *did*, in fact, regard him as a scientific charlatan—for Steinach it expanded to a paranoia that his scientific rivals were conspiring to misrepresent and steal his research.¹³⁹ In a 1930 letter to Benjamin, Steinach fumed about a recent article on male hormones that mentioned him only in passing, in a single sentence. He declared the sentence (“Somewhat similar experiments had been made by Steinach”) to be “infamous,” and accused the article’s authors, as well as others who collaborated to downplay his research, of being “usurpers” trying to abscond with his results.¹⁴⁰ In other letters Steinach hems and haws over whether to attend certain international conferences, based on whether or not he believed that the other participants would be friendly to him.¹⁴¹ In his obituary of Steinach, Benjamin recounted that in those years Steinach “became unduly suspicious even toward his

¹³⁷ Benjamin, “Effects of Vasectomy,” 437.

¹³⁸ Benjamin, “Eugen Steinach, 1861–1944,” 437. For more on Voronoff, see Catherine Rémy, “‘Men Seeking Monkey-Glands’: The Controversial Xenotransplantations of Doctor Voronoff, 1910–30,” *French History* 28, no. 2 (June 2014): 226–40.

¹³⁹ *Ibid.*, 437–38. For one example of Steinach being regarded poorly (which is, however, not *entirely* unsupportive of Steinach’s research), see “The Steinach Operation for Rejuvenation,” *Southern Medical Journal* 18, no. 3 (1925): 224–25.

¹⁴⁰ Steinach to Benjamin, July 27, 1930. The article that prompted Steinach’s rage was Casimir Funk, Benjamin Harrow, and A. Lejwa, “The Male Hormone,” *American Journal of Physiology* 92, no. 2 (March 1930): 440–49.

¹⁴¹ Eugen Steinach to Harry Benjamin, December 30, 1925, Box 1, NYAM.

friends and easily antagonized people. He was too deeply hurt himself to realize when he hurt others.”¹⁴² Clearly, Benjamin was speaking from extensive personal experience.¹⁴³

Such paranoia even led Steinach to break off friendships entirely. Max Thorek, who had enjoyed a healthy friendship with Steinach in the early twenties, eventually published research indicating that Steinach’s rejuvenation technique was ineffective. He sent a copy of the article to the Viennese endocrinologist because “He was an eminent man of science, and I felt he would realize that I could not have written contrary to my findings. I know that Steinach read the article, for he has never had anything to do with me since. I regret his attitude, but I could not do otherwise. I sought the truth and lost Steinach. This is one of my unpleasant memories.”¹⁴⁴

In sum, Steinach gives the appearance of a man who was deeply insecure about the reception of his research. Perhaps this is to be expected, given the skepticism with which he was treated by most of the medical and scientific community, despite the adulation of the press. Steinach’s combativeness was still on display in the first chapter of his 1940 autobiography, where he declared that “The public knows only a part of the truth concerning reactivation, and a half-truth is fundamentally a whole untruth.” Therefore, after “yielding to much pressure,” he decided to write the book, in order to correct “the misrepresentations and misunderstanding that now surround my work.”¹⁴⁵ But while Steinach’s negative reputation was surely due in part to an over-enthusiastic press (as well as to puritanism on the part of the academy), perhaps his insecurity also reflects the very real fact that, after his groundbreaking endocrinological work of

¹⁴² Benjamin, “Eugen Steinach, 1861–1944,” 438.

¹⁴³ See, for example, Steinach to Benjamin, August 24, 1930, where Steinach gives a rare apology (of sorts) for his criticism of Benjamin.

¹⁴⁴ Thorek, *A Surgeon’s World*, 189.

¹⁴⁵ Steinach, *Sex and Life*, 11–12.

the 1910s, his subsequent projects—and the ones by which he was primarily known, especially among the public—had major problems of verification.¹⁴⁶ Few researchers outside Steinach's circle were able to reproduce his findings.¹⁴⁷ Even those who were friendly to him and inclined to accept his research—such as Thorek or Hirschfeld—found themselves ultimately unable to verify his results. I suspect that, deep down, Steinach knew that his work had major problems. In hindsight, we today can argue that some of those problems stem from an inadequate—though hardly unusual—conceptualization of gender. But for Steinach himself, the solution to such problems never arrived.

Conclusion

For today's readers, Steinach surely stands as a strange figure. He advocated passionately for a cure for homosexuality that involved removing the testicles of his patients, and yet he does not seem to have been motivated by any overt homophobia. He clearly understood homosexuality as an aberration, one that would be better not to exist, and yet he partnered with the best-known advocate for homosexual rights of his day, and he never gave any indication of moral judgment—his search for a 'cure' seems to have stemmed from a paternalistic desire to help people 'afflicted' with sexual inversion, rather than from any real hatred, fear, or moral

¹⁴⁶ Moreover, by the late twenties even some of Steinach's transplantation findings were being questioned, particularly his dubious 'doctrine of gonadal antagonism,' which was disproved by Carl Moore and Dorothy Price in 1932. (Steinach himself never repudiated the doctrine.) Carl R. Moore and Dorothy Price, "Gonad Hormone Functions and the Reciprocal Influence between Gonads and Hypophysis with Its Bearing on the Problem of Sex Hormone Antagonism," *American Journal of Anatomy* 50 (1932): 13–67.

¹⁴⁷ This was especially the case with Steinach's cure for homosexuality. A few other doctors were able to verify some of his rejuvenation findings, but far more were unable to do so, and even those who reported initial success often later became skeptical, attributing early positive results to the effect of self-suggestion.

condemnation of homosexuals. Moreover, while Steinach's cure was unsuccessful, it represented a reasonable extrapolation of his previous research, which had in general been wildly successful. At a time when many scientists and educated people were beginning to see biological sex as a chemical spectrum and to regard behavior as originating overwhelmingly in biological processes—after all, this was also the era of phrenology and Lombroso's criminology—Steinach's hypothesis makes a certain kind of sense. But it especially makes sense in a context in which the normativity of sex has been questioned, but the normativity of gender has not. Implicit, and occasionally almost explicit, throughout Steinach's work is the assumption that gender-typical behavior constitutes 'normal' behavior, in the biological sense, the sociological sense, and especially in the normative sense. In my terminology, this is the result of giving sex ontological priority while letting gender retain intellectual priority. Steinach may not have seen a homosexual as less of a *person*, but he certainly, and literally, saw him as less of a *man*.

While Steinach's work on rejuvenation may be less problematic (from a present-day perspective) than his 'cure' for homosexuality, it relied on many of the same assumptions about sex, gender, and sexuality. Both projects relied on a conception of sex that was both spectral and determinative of gender and sexual expression. Steinach redefined both the homosexual and the old man as persons suffering from a deficit of biological masculinity. Another notable similarity between the cures for homosexuality and old age is that while they claimed to make the patient more male, the operations also required the partial or complete sterilization of the patient. As numerous authors have noted, a 'normal' sex drive was usually defined at the turn of the century as driven by the aim of reproduction.¹⁴⁸ To be uninterested in sex was just as concerning as

¹⁴⁸ See, for example, Jonathan Ned Katz, *The Invention of Heterosexuality* (New York: Dutton, 1995); Angus McLaren, *Twentieth-Century Sexuality: A History* (Oxford: Blackwell, 1999); Thomas W. Laqueur, *Solitary Sex: A Cultural History of Masturbation* (New York: Zone Books,

overindulgence in sex: both suggested a decoupling of sexual desire from the proliferation of the race. And yet Steinach claimed to be able to restore the patients who underwent his procedures to ‘normal’ masculinity—with particular reference to their sexuality—despite their partial or complete sterilization. In Steinach’s view, the fertility of a man, or even a woman, is incidental to the factors that ‘actually’ make him male or her female. The fact the Steinach procedure achieved such fame in the twenties suggests that the spread of the endocrinological conception of sex also helped to usher in a shift away from the previously lockstep association of normal sexuality with reproduction.

Moreover, the popular awareness, and apparent acceptance, of Steinach’s research indicates that perhaps the understanding of sex as a spectrum—at least in a loosely conceptualized way—was actually quite widespread in these years, even among the non-intelligentsia. Of course, those members of the public who were attracted to the Steinach procedure generally wanted first and foremost to return to their former vigor, especially (and to Steinach’s eternal chagrin) in the sexual sense. But the fact that they found his procedure *plausible* indicates that, at a certain level, they must have accepted the theoretical idea of sex behind it. If I am accurate here, then this idea (i.e., that a significant portion of the broader population understood sex in at least a quasi-spectral way) would mark a significant turn in the history of the idea of sex. Today’s attempts to redefine sex as non-binary attribute inhering in a vast range of biological phenomena would not only reflect the theoretical innovations of Steinach and others of this era, but actually signal a (partial) return to the popular understanding of sex in the early part of the century.

2003); Anna Clark, *Desire: A History of European Sexuality* (New York: Routledge, 2008); and Dagmar Herzog, *Sexuality in Europe: A Twentieth-Century History* (Cambridge: Cambridge University Press, 2011).

Nevertheless, no matter how prescient certain aspects of Steinach's conception of sex may seem today, his conceptualizations of gender and sexuality remain quite distant from those that have been put forward by gender and queer theorists since the eighties. In much of this dissertation (and particularly in its introduction), I make the argument that gender research demands (biological) sexual analysis, but Steinach serves as a reminder (one of many) that sex research demands gender analysis. In the previous chapter, I suggested that much of the general (although not universal) success of Steinach's animal transplantation experiments stemmed from his apparent lack of attention to matters concerning human society. His narrow focus on the sexual biology of animals allowed him to propose new definitions of sex without fear (or possibly even consideration) of their radical implications for human self-understanding.¹⁴⁹ However, for the same reason, his later work involving humans was significantly less successful. While one can somewhat justifiably ignore (or treat as reductively biodeterministic) the social and cultural life of rats and guinea pigs, the same is not possible when dealing with people. Whether or not one believes in the concept of human free will, or in a non-biological mind, any model of human behavior that ignores the possibility of even partial socio-cultural causation will be doomed to failure. In this respect, Steinach's problem is the opposite of Weininger's problem. Weininger undermined his theory of biological sex with his insistence in the second part of *Sex and Character* on absolute dualism. Steinach, in contrast, undermined his theory of biological sex with his insistence on a monistic biological essentialism.¹⁵⁰

¹⁴⁹ Of course, this argument should not be taken too far. As I argued in the previous chapter, many of the problems of that research can also be traced to Steinach's lack of attention to social matters, and in particular to his naïve projection of his own gender and sexuality standards onto his test animals.

¹⁵⁰ As we shall see in the fourth chapter, this is a problem that Hirschfeld shared with Steinach.

Rather than destabilizing the sex-gender relationship, as we might expect (or hope) today, Steinach's undermining of the sexual binary only provided a new way to enforce the gender and sexuality norms of his time and culture. Above all, Steinach's research indicates the degree to which gender, in his time and perhaps in ours as well, tends to be more foundational and unquestionable than sex. In the last analysis, we must take note of what Steinach called into question: the binary conception of sex may have been strong, but the hierarchical and bifurcated conception of gender was much stronger.

Chapter 4

Sexual Theory, Political Praxis: Magnus Hirschfeld and the Theory of Sexual Intermediaries

All individuals have to be judged according to their own nature, not according to a nature foreign to them.

Magnus Hirschfeld

[W]e have always represented the standpoint that the results of scientific research have no purpose if they are not exploited practically.

Magnus Hirschfeld¹

In the last fifty years, many scholars of the history of medicine and sexuality (including such influential writers as Thomas Szasz, David Halperin, and above all Michel Foucault) have linked bio-determinist conceptions of sexuality and gender variance with conservative political agendas seeking to criminalize sexual difference through the deployment of biopower.² This linkage is justified. In the early twentieth century psychologists and sexologists, particularly those in Germany and Austria, created the medical category of the homosexual, a move that pathologized

¹ Magnus Hirschfeld, *Die Homosexualität des Mannes und des Weibes*, 1st ed. (Berlin: Louis Marcus Verlagsbuchhandlung, 1914), 313 [370]; 975 [1086]. All citations from the 1914 German edition of *Homosexualität* will reference the German page first, followed (in brackets) by the corresponding page in Lombardi-Nash's English translation: *The Homosexuality of Men and Women*, trans. Michael A. Lombardi-Nash (1914; Amherst, NY: Prometheus Books, 2000). The same system will also be used for citations from Magnus Hirschfeld, *Die Transvestiten. Eine Untersuchung über den erotischen Verkleidungstrieb* (Berlin: Alfred Pulvermacher & Co., 1910); and *Transvestites: The Erotic Drive to Cross Dress*, trans. Michael A. Lombardi-Nash (1910; Buffalo, NY: Prometheus Books, 1991).

² See, for example, Michel Foucault, *The History of Sexuality, Volume I: An Introduction*, trans. Robert Hurley (Paris: Editions Gallimard, 1976; New York: Random House, 1978); David M. Halperin, "One Hundred Years of Homosexuality," *Diacritics* 16, no. 2 (1986): 34–45; David M. Halperin, "How to Do the History of Male Homosexuality," in *How to Do the History of Homosexuality*, by David M. Halperin (Chicago: University of Chicago Press, 2002), 104–37; and Thomas Szasz, "The Medicalization of Sex," *Journal of Humanistic Psychology* 31, no. 3 (1991).

and also ‘exclusivized’ same-sex desire, as well as the categories of the masochist, the fetishist, and so on.³ To this list may be added the medical category of the transvestite—a word coined by Magnus Hirschfeld in an eponymous work from 1910. As Hubert Kennedy put it, the possibility of an *emancipatory* biological explanation of homosexuality can seem “quixotic” at best.⁴ But, as Scott Spector has recently pointed out, even in Foucault’s work the function of biological knowledge as a tool of oppression is not so simple. As he wrote, “Nowhere in the Foucauldian corpus are the processes mobilizing all [the] apparently contradictory forces” of resistance and discipline, of subjectivation and subjection “so expressly pronounced as in the work on the history of sexuality, yet the historical literature following it returns persistently to the image of repressive discourse(s) entrapping and disciplining subjects in its web. Foucault consistently rejected this characterization of his model of power and subjectivation.”⁵

Hirschfeld, a leading sexologist and political activist in Wilhelmine and Weimar Germany, provides a perfect example of the complicated relation between scientific knowledge and sexual liberation, particularly as concerns bio-determinist narratives of sexual variation. (Or, in my terminology, narratives of sexual variation that assign sex ontological priority over gender and sexuality.) In Hirschfeld’s view, all ‘abnormal’ sexual variations—a category that for him included non-normative sexualities and gender expressions, as well as intersexuality—should be understood not as degenerations or as acquired diseases, but rather as conditions of biological

³ By ‘exclusivized,’ I mean that homosexual desire became understood as the exclusive province of the homosexual, rather than something that any ‘normal’ person might experience.

⁴ Hubert Kennedy, “Karl Heinrich Ulrichs: First Theorist of Homosexuality,” in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1997), 26–45, at 26.

⁵ Scott Spector, “After *The History of Sexuality*? Periodicities, Subjectivities, Ethics,” in *After The History of Sexuality: German Genealogies with and beyond Foucault*, ed. Scott Spector, Helmut Puff, and Dagmar Herzog (New York: Berghahn Books, 2012), 1–14, at 5.

intermediacy existing between the ideal types of the *Vollman* and *Vollweib* (full man / woman). Eventually, Hirschfeld came to refer to his thinking on such matters as the “Theory of Sexual Intermediaries” (*Zwischenstufentheorie*). Although the largest part of Hirschfeld’s research and activism concerned homosexuality, I argue that the grounding of both his scientific and his political thinking can be found in the *Zwischenstufentheorie*.

Hirschfeld was led to this theory by two occasionally opposed intellectual aims: toward categorization, and toward individualization. In putting forward the theory, he sought simultaneously, first, to explain the existence of any given sexual variation by placing it in a system of biological masculinity and femininity and second, to emphasize the ultimately unique nature of every person’s sexual configuration. It was because of this uneasy alliance of aims that Hirschfeld’s *Zwischenstufentheorie* could become a potent political tool. The categorizing aim emphasized that so-called sexual intermediaries are not aberrant, but rather have a place in the overall scheme of nature, while the individualizing aim emphasized their humanity—and also subtly questioned the normativity of heterosexuality and other ‘normal’ sexual configurations. Hirschfeld’s theory of sexual intermediaries was deeply rooted in a biologically essentialist understanding of sexual variation; however, some of Germany’s other homosexual rights campaigners opposed such an approach and rejected Hirschfeld’s theory. Nevertheless, I argue that much of the success that Hirschfeld was able to achieve came from his insistence on rooting understanding of homosexuality in the essentialist science of his era. In Foucauldian terms, Hirschfeld used his *Zwischenstufentheorie* to create sexual knowledge, and thus bio-power, which he then leveraged for the purposes of sexual liberation.⁶

⁶ On bio-power, see Foucault, *The History of Sexuality*, 139–43.

In this chapter, I illustrate the links between Hirschfeld's politics of LGBT liberation (as we might say today) and his understanding of biological sex. I contend that Hirschfeld was able to turn his universal theory of sexual intermediaries, the most radical vision of a sexual spectrum of its time, into a political tool because of the humanizing and emancipatory implications contained within it. Hirschfeld's personal motto, *per scientiam ad justitiam* (through science to justice), reflected his belief in an intimate connection between human rights and science. As he saw it, understanding the world in a properly scientific way means also understanding the fundamental equality of every human.

I begin the present chapter with a brief biographical sketch. I next explicate Hirschfeld's theory of sexual intermediaries, showing how it developed over the course of his early career. I then explore how Hirschfeld's understanding of sex as fundamentally spectral underpinned his political activities. I conclude with some thoughts about reconciling (or not reconciling) Hirschfeld's non-binary understanding of sex with his biological essentialism.

Biographical Sketch

Of the various people examined in this dissertation, Magnus Hirschfeld (1868–1935) is almost certainly the most famous today. (One could perhaps make a case for Otto Weininger, but that would fail to distinguish fame from infamy.) In 1897, Hirschfeld founded the Scientific-Humanitarian Committee (SHC; in German, Wissenschaftlich-humanitäres Komitee), the first LGBT-rights organization in history.⁷ Over the next several decades the SHC, under Hirschfeld's

⁷ Many scholars agree that the SHC was the first LGBT rights organization in history. See, for example, Ralf Dose, *Magnus Hirschfeld: The Origins of the Gay Liberation Movement*, trans. Edward H. Willis (2005; New York: Monthly Review Press, 2014), 41; and James D. Steakley, "Per scientiam ad justitiam: Magnus Hirschfeld and the Sexual Politics of Innate Homosexuality," in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge,

leadership, ran an extensive campaign to end the legal and cultural stigmatization of homosexuals.⁸ This campaign featured high-level political efforts, scientific research, and public education efforts. By the end of the First World War, Hirschfeld could reasonably have been considered the most prominent advocate for homosexual rights in Germany, and perhaps in the entire western world. He was also widely regarded as one of the world's foremost scientific experts on homosexuality, along with such sexological luminaries as Iwan Bloch, Havelock Ellis, and Albert Moll.

Hirschfeld was born in 1868 in Kolberg, Pomerania, which at that time was in Prussia but is today the Polish city of Kołobrzeg.⁹ His father Hermann was a physician who specialized in naturalistic and holistic medicine. Hermann was apparently quite well-respected in Kolberg, even beyond its small Jewish community; after his death in 1885, the city's residents placed a

1998), 133–54, at 139. However, some scholars disagree. Hubert Kennedy, for example, points to Karl Heinrich Ulrichs's plans for an Urning League in 1865, and Ralph Leck goes back further, to Charles Fourier's plans for utopian societies in the early nineteenth century. Kennedy, "Karl Heinrich Ulrichs," 39; Ralph M. Leck, *Vita Sexualis: Karl Ulrichs and the Origins of Sexual Science* (Urbana: University of Illinois Press, 2016), 56. However, as Dose notes, these other earlier organizations "failed or had only limited effect" (41).

⁸ At its peak, the SHC's membership numbered about seven hundred. Dose, *Magnus Hirschfeld*, 42. In its early years it quickly expanded beyond its Berlin headquarters to include chapter organizations in several other cities (such as Munich, Leipzig, and Frankfurt), although many of these died out by the 1910s. Robert Beachy, *Gay Berlin: Birthplace of a Modern Identity* (New York: Knopf, 2014), 118. Hirschfeld also claimed that "representatives and agents" of the SHC were present in many countries besides Germany, including most European countries, the US, South Africa, and China. Hirschfeld, *Homosexualität*, 975 [1087]. Minutes of meetings from several of the regional chapters of the SHC may be found in the so-called "Hirschfeld Scrapbook." MS II, pp. 17–18, 21–25, Magnus Hirschfeld Collection, Kinsey Institute, Indiana University, Bloomington, IN (hereafter cited as "KI").

⁹ Most of the biographical details below come from Dose, *Magnus Hirschfeld*. Some additional details come from Charlotte Wolff, *Magnus Hirschfeld: A Portrait of a Pioneer in Sexology* (London: Quartet, 1986); and from Elena Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom: A History of the First International Sexual Freedom Movement* (New York: Palgrave Macmillan, 2010).

monument to his memory on the city Promenade (see fig. 4.1). (However, the monument was destroyed “immediately” after the Nazis came to power in 1933.¹⁰) After initially enrolling to study modern languages at the university in Breslau (now Wrocław, Poland), Magnus decided to follow in his father’s professional footsteps. He eventually completed his medical studies in Berlin, with the famed Rudolf Virchow serving as one of his examiners.¹¹ In 1894 Hirschfeld moved to Magdeburg, where he opened a neuropathic medical practice, specializing in hydrotherapy. Two years later he moved to the Berlin suburb of Charlottenburg and opened a similar practice. He would remain a resident of the Berlin area until 1930.

¹⁰ Dose, *Magnus Hirschfeld*, 19.

¹¹ Rudolf Virchow—who also supervised Hermann Hirschfeld’s medical dissertation—was one of the most famous physicians of the nineteenth century. He is often regarded as the father of modern pathology. With respect to Hirschfeld’s conception of biology, however, it may be more important to note that Virchow also advocated understanding the ovary—rather than the uterus—as the ‘true’ seat of femininity. On this aspect of Virchow’s thought, see Chandak Sengoopta, *The Most Secret Quintessence of Life: Sex, Glands, and Hormones, 1850–1950* (Chicago: University of Chicago Press, 2006), 12–18.



Figure 4.1: “Magnus Hirschfeld with his sister, Jenny Hauck, in Kolberg by the monument to their father, Hermann Hirschfeld. Dated August 3, [19]30”¹²

Shortly after Hirschfeld moved to Charlottenburg, he published his first work addressing homosexuality, *Sappho und Sokrates, oder wie erklärt sich die Liebe der Frauen und Männer zu Personen des eigenen Geschlechts* (Sappho and Socrates, or what explains the love of men and women for persons of their own sex). Hirschfeld was inspired to write this pamphlet of thirty-five pages after one of his patients committed suicide on the night before his wedding. In a letter that Hirschfeld received the next day, the patient revealed that he desired other men and “had not the power” to marry his fiancée or to reveal the truth about his sexuality to his family.¹³ On the

¹² Image and caption from Dose, *Magnus Hirschfeld*, between 64 and 65.

¹³ Magnus Hirschfeld [Th. Ramien], *Sappho und Sokrates, oder Wie erklärt sich die Liebe der Männer und Frauen zu Personen des eigenen Geschlechts?* (Leipzig: Max Spohr, 1896), 3–4; “Ich hatte nicht die Kraft.” The patient expressed his condition somewhat elliptically, referring (in Hirschfeld’s quotation) to himself as one of those “countless people, who... carry on their lives under a double curse, that of nature and that of law” (“zahlloser Menschen, die gleich mir unter einem doppelten Fluch, dem der Natur und dem des Gesetzes ihr Leben dahinschleppen”).

advice of his publisher Max Spohr, Hirschfeld wrote the pamphlet under a pseudonym, “Th. Ramien,” but he readily claimed it as his own in later writings.¹⁴ Presumably, Hirschfeld was not yet ready, at this time, to bear the potential opprobrium associated with publicly advocating for the naturalness of homosexuality. He may also have feared that his own homosexuality (which he never publicly acknowledged) might come to light. Regardless, just six months later, in 1897, he came together with a few other activists and scientists to found the Scientific-Humanitarian Committee, which aimed to campaign for the decriminalization of homosexuality. In Ralf Dose’s words, the SHC’s first petition (of many) to the Reichstag for the repeal of paragraph 175, the German anti-sodomy law, constituted “the founding document of the homosexual rights movement in Germany.”¹⁵

Hirschfeld would serve as the head of the SHC until 1929, at which time a split occurred among the Committee leadership over the most effective means of securing homosexual rights in Germany (more on this below). From 1897 until that time, he led the SHC in an extensive public information campaign that included the publication of a popular brochure (“Was soll das Volk vom Dritten Geschlecht wissen?” [What should the people know about the third sex?]) and numerous lectures, many of which were held in popular venues, such as beer halls.¹⁶ In 1919,

¹⁴ See, for example, Hirschfeld, *Homosexualität*, 351–52 [410–11]. Beginning in 1902, later editions of *Sappho* credited Hirschfeld as the author. James D. Steakley, *The Writings of Dr. Magnus Hirschfeld: A Bibliography* (Toronto: Canadian Gay Archives, 1985), 2.

¹⁵ Dose, *Magnus Hirschfeld*, 41. Copies of several of the petitions presented by the SHC to the Reichstag may be found in the so-called “Hirschfeld Scrapbook.” MS II, pp. 8–9, Magnus Hirschfeld Collection, the Kinsey Institute, Indiana University (hereafter “KI”). An English translation of the first petition (from 1897) has also been published in *We Are Everywhere: A Historical Sourcebook of Gay and Lesbian Politics*, ed. Mark Blasius and Shane Phelan (New York: Routledge, 1997), 135–37.

¹⁶ Das Wissenschaftlich-humanitäres Komitee, *Was soll das Volk vom Dritten Geschlecht wissen?* (Leipzig: Max Spohr, 1901); a transcription of this pamphlet is available online at http://www.schwulencycity.de/hirschfeld_was_muss_volk_wissen_1901.html (accessed June 1, 2018). An early English translation of the pamphlet was issued in 1903 by the British Society for

Hirschfeld and the SHC collaborated with Richard Oswald to create an *Erklärungsfilm* (enlightenment / sexual education film) about a talented violinist who commits suicide after his homosexuality is exposed by a blackmailer. Hirschfeld himself appeared in the movie as a doctor giving a public lecture about the naturalness of homosexuality. As a result of the lecture, the violinist's lover's sister learns to accept her brother's sexuality.¹⁷ Before the collapse of the Weimar Republic several other films were made with Hirschfeld's involvement.¹⁸ Throughout the Weimar years the SHC continued to lobby politicians for the removal of paragraph 175, and in 1929 it was nearly successful in achieving this aim.¹⁹

The SHC also sponsored scientific research on the subject of homosexuality, particularly through its main journal, the *Jahrbuch für Sexuelle Zwischenstufen* (Yearbook for sexual intermediaries). Between its founding in 1899 and its collapse in 1923 (when the disastrous state of the German economy ended its regular publication), Hirschfeld served as the journal's editor and as a major contributor. In these years Hirschfeld also published several book-length studies, among them the celebrated *Transvestites* (1910) and *Homosexuality of Men and Women* (1914), which contained the first detailed accounts of his theory of sexual intermediaries. In the Weimar years, Hirschfeld wrote two large multi-volume works, *Sexual Pathology* (1917–20) and *Geschlechtskunde* (Sexology; 1926–30). In 1919 he founded the Institute for Sexual Science

the Study of Sex Psychology, which has been reprinted in Mark Blasius and Shane Phelan, eds., *We Are Everywhere: A Historical Sourcebook of Gay and Lesbian Politics* (New York: Routledge, 1997), 138–42. Flyers for various lectures given by Hirschfeld, including one held at the Patzenhofer Brewery, may be found in the Hirschfeld Scrapbook: MS IV, pp. 19–20, KI.

¹⁷ Richard Oswald, dir., *Anders als der Andern* (Germany, 1919). For an analysis of this film, see James D. Steakley, "Cinema and Censorship in the Weimar Republic: The Case of *Anders als der Andern*," *Film History* 11, no. 2 (1999): 181–203.

¹⁸ For a list, see Wolff, *Magnus Hirschfeld*, 460.

¹⁹ Laurie Marhoefer, *Sex and the Weimar Republic: German Homosexual Emancipation and the Rise of the Nazis* (Toronto: University of Toronto Press, 2015), chapter 5.

(Institut für Sexualwissenschaft), located in Berlin’s Tiergarten. The Institute eventually came to hold an enormous archive of documents and objects relating to sexual life, as well as film halls and a popular museum (see fig. 4.2).²⁰ It also contained clinics for patients seeking aid for a variety of sexual issues, from homosexuality to impotence to marital counseling. Among other reasons for its importance in queer history, Hirschfeld’s institute was the site of several sex reassignment surgeries, including, in 1931, what are thought to be the world’s first and second vaginoplasties undergone by trans women.²¹ The second of those patients was Lili Elvenes, a.k.a. Lili Elbe, whose memoir (of somewhat dubious authorship) *Man into Woman* has recently been adapted into the novel and film *The Danish Girl*.²²

²⁰ On the museum of the Institute for Sexual Science, see Michael Thomas Taylor, “Magnus Hirschfeld’s Institute for Sexual Science as Archive, Museum, and Exhibition,” in *Not Straight from Germany: Sexual Publics and Sexual Citizenship Since Magnus Hirschfeld*, ed. Michael Thomas Taylor, Annette F. Timm, and Rainer Herrn (Ann Arbor: University of Michigan Press, 2017), 12–37.

²¹ See Joanne Meyerowitz, *How Sex Changed: A History of Transsexuality in the United States* (Cambridge, MA: Harvard University Press, 2002), 18–21; and Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom*, 69–70.

²² Lili Elbe, *Man into Woman: An Authentic Record of a Change of Sex*, ed. Niels Hoyer, trans. H. J. Stenning (1931; London: Jarrolds, 1933); David Ebershoff, *The Danish Girl* (New York: Viking, 2000); Tom Hooper, dir., *The Danish Girl*, 2015. In Elbe’s memoir, Hirschfeld is represented by the fictionalized character “Dr. Hardenfeld.” For further details on Lili Elbe, including investigations into the authorship of her memoir, see the work of Sabine Meyer: “Divine Interventions: (Re)birth and Creation Narratives in *Fra mand til kvinder—Lili Elbes bekendelser*,” *Kvinder, Køn & Forsking*, no. 3–4 (2011): 68–76; and “*Wie Lili zu einem richtigen Mädchen wurde*”: *Lili Elbe: Zur Konstruktion von Geschlecht und Identität zwischen Medialisierung, Regulierung und Subjektivierung* (Bielefeld: transcript, 2015).



Figure 4.2: “Karl Giese (Magnus Hirschfeld’s lover) giving visitors to the Institute for Sexual Science a tour of the museum”²³

In 1930, perhaps motivated by his recent resignation as chair of the SHC, Hirschfeld decided to conduct a world-wide lecture tour. After visiting several of the biggest cities in America (with lectures mostly arranged by Harry Benjamin and Max Thorek), Hirschfeld then went on to Japan, China, India, and the Middle East.²⁴ By the conclusion of his tour, it was

²³ Photo and caption from Beachy, *Gay Berlin*, between 106 and 107. Beachy credits the photo to the Schwules Museum in Berlin.

²⁴ In a rare autobiographical flourish, Hirschfeld published memoirs of his world lecture tour: Magnus Hirschfeld, *Die Weltreise eines Sexualforschers* (Brugg: Bözberg-Verlag, 1933). This work was translated into English rather quickly: *Men and Women: The World Journey of a Sexologist*, trans. O. P. Green (New York: G. P. Putnam’s Sons, 1935). However, like most English translations of Hirschfeld’s work published during or shortly after his life, *World Journey* was significantly abridged. For more on Hirschfeld’s lecture tour, see J. Edgar Bauer, “Sexuality and Its Nuances: On Magnus Hirschfeld’s Sexual Ethnology and China’s Sapiential Heritage,” *Anthropological Notebooks* 17 (January 1, 2011): 5–27; and Heike Bauer, *The Hirschfeld Archives: Violence, Death, and Modern Queer Culture* (Temple University Press, 2017).

already becoming clear that he would no longer be safe in Berlin. As he wrote to Harry Benjamin in March 1932, near the end of his tour, “I am reluctant to return to Germany, where every third voter has cast his vote for a Hitler as Reich President.”²⁵ As a leading voice of homosexual liberation, in addition to being himself homosexual, as well as Jewish and a socialist, Hirschfeld had long been a particular target of far-right ire. (In 1920, he was assaulted by nationalist thugs in the streets of Munich and beaten so badly that several newspapers mistakenly reported his death.²⁶) Instead of returning to Germany, Hirschfeld moved to Switzerland for a time, and then afterward to France. After establishing the Hitler dictatorship in 1933, the Nazis moved almost immediately to seize Hirschfeld’s Institute for Sexual Science.²⁷ Members of the Nazi Student League ransacked the Institute and burned much of its sizable archive (see fig. 4.3). What remained was sold off at auction.²⁸

²⁵ Magnus Hirschfeld to Harry Benjamin, March 16, 1932, “Korrespondenz von Harry Benjamin,” Archiv der Magnus-Hirschfeld-Gesellschaft.

²⁶ For one example, see “Tod des Dr. Magnus Hirschfeld,” *Neue Freie Presse*, October 9, 1920, Archiv der Magnus-Hirschfeld-Gesellschaft.

²⁷ The Enabling Act, which (together with the earlier Reichstag Fire Decree) granted Hitler dictatorial power, passed the Reichstag on March 24, 1933. On May 6, fewer than forty-five days later, the Nazis seized the Institute. The book burning occurred on May 10.

²⁸ Dose notes that Hirschfeld was able to save some of the material from the ISS archive by purchasing it back himself, from France, or through intermediaries. Dose, *Magnus Hirschfeld*, 66.



Figure 4.3: An SA member throws confiscated books into the fire at a public book burning at Berlin's Opernplatz on May 10, 1933. Much of the archive of Hirschfeld's Institute for Sexual Science was burned at this event.²⁹

Hirschfeld died in Nice, slightly more than two years later, on May 14, 1935—his sixty-seventh birthday. After his death, his legacy fell into decline. Although he had escaped physical harm from the Nazi regime, the possibilities for further dissemination of his research were severely curtailed. As Ralf Dose notes, by the time of Hirschfeld's death he had only “two remaining students” to promote his legacy.³⁰ Over the next few decades, his name would be

²⁹ Still from a motion picture. The United States Holocaust Memorial Museum, courtesy of National Archives and Records Administration, College Park, <https://collections.ushmm.org/search/catalog/pa26364>.

³⁰ Dose, *Magnus Hirschfeld*, 79.

almost forgotten, until his “rediscovery” by a new generation of historians in the 1970s and 1980s.³¹ Many of these researchers saw their work as contributions to the new field of gay and lesbian history, and they found in Hirschfeld a commitment to both academic investigation and political advocacy that resonated with their own politics. In subsequent years the volume of work on him has ballooned enormously, to the point where a recent article in *German History* consisted solely of a pointed comparison of four different biographies of Hirschfeld.³² Indeed, the number of pages written *about* Hirschfeld may soon even overtake the number of pages written *by* this remarkably prolific author.³³

³¹ For thoughts concerning Hirschfeld’s lack of name-recognition in the decades shortly after his death, see Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom*, xii–xiii; Dose, *Magnus Hirschfeld*, 8–12; and Bauer, *The Hirschfeld Archives*, 125–34. Among the most important titles in the early rediscovery of Hirschfeld are James D. Steakley, *The Homosexual Emancipation Movement in Germany* (New York: Arno Press, 1975), which contains perhaps the first substantive historical examination of Hirschfeld; and Charlotte Wolff’s biography, *Magnus Hirschfeld*. Also notable is the journal *Mitteilungen der Magnus Hirschfeld Gesellschaft*, which began publication in 1983 under the editorship of Ralf Dose and Hans-Günter Klein, and which is still published biannually as of this writing.

³² Kirsten Leng, “Magnus Hirschfeld’s Meanings: Analysing Biography and the Politics of Representation,” *German History* 35, no. 1 (March 2017): 96–116. The four biographies that Leng compares are Wolff, *Magnus Hirschfeld*; Manfred Herzer, *Magnus Hirschfeld: Leben und Werk eines jüdischen, schwulen und sozialistischen Sexologen*, 2nd ed. (1992; Hamburg: MännerschwarmSkript, 2001); Dose, *Magnus Hirschfeld*; and Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom*. For a somewhat similar comparison of Wolff’s and Herzer’s respective biographies, see Toni Brennan and Peter Hegarty, “Magnus Hirschfeld, His Biographies and the Possibilities and Boundaries of ‘Biography’ as ‘Doing History,’” *History of the Human Sciences* 22, no. 5 (December 2009): 24–46. Recently, Manfred Herzer has published a second biography of Hirschfeld, which I have not yet been able to consult: *Magnus Hirschfeld und seine Zeit* (Berlin: De Gruyter Oldenbourg, 2017).

A detailed bibliography of work on Hirschfeld up to 2014, including both German- and English-language research, can be found in Dose, *Magnus Hirschfeld*, 110–16. Important volumes published since Dose’s book include Bauer, *The Hirschfeld Archives*; Beachy, *Gay Berlin*; Edward Ross Dickinson, *Sex, Freedom, and Power in Imperial Germany, 1880–1914* (Cambridge: Cambridge University Press, 2014); Marhoefer, *Sex and the Weimar Republic*; and Taylor, Timm, and Herrn, eds., *Not Straight from Germany*.

³³ By Mancini’s count, Hirschfeld’s “oeuvre comprises over 2000 titles.” *Magnus Hirschfeld and the Quest for Sexual Freedom*, ix. For an extensive bibliography, consult Steakley, *The Writings of Dr. Magnus Hirschfeld*. A second, updated edition of Steakley’s bibliography appears to have

The Theory of Sexual Intermediaries: Early Formulations

When Hirschfeld embarked on his world-wide lecture tour in 1930, George Sylvester Viereck hailed him in the Hearst newspaper chain as the “Einstein of sex.”³⁴ (According to one report, Hirschfeld responded to such praise by playfully noting that perhaps it is Einstein who should be called the “Hirschfeld of physics.”³⁵) Such a title was particularly appropriate for Hirschfeld (or for Einstein) not merely because of his popular recognition as major scientific figure, but also because Hirschfeld “espouses the theory of sex relativity... [and] carries [this doctrine] to its logical conclusion.”³⁶ As Viereck’s comment suggests, Hirschfeld understood biological sex in a thoroughly spectral way—more so than did any other thinker examined in this dissertation. Indeed, his understanding of nature as a whole was spectral. As he wrote in one of his early treatises, “Whenever [a phenomenon] fits into a continuous series of related natural phenomena in such a way that its absence would mean a virtual breakdown in the unbroken line, it is proof of the natural and original nature of [that] phenomenon.”³⁷ In this respect, it is unsurprising that

been published in Berlin in 2004, but I have not been able to view it. For a more selective bibliography (including works discovered since the publication of Steakley’s book), see Dose, *Magnus Hirschfeld*, 105–10.

³⁴ George Sylvester Viereck, “‘Dr. Einstein’ of Sex Not So Favorably Impressed by U.S.,” *Wisconsin News*, February 2, quoted in Steakley, “*Per scientiam*,” 133. Steakley notes that this article appeared in several other Hearst-owned newspapers, including “*Albany Times-Union*, *Chicago Herald and Examiner*, *Detroit Times*, *Los Angeles Examiner*, *Pittsburgh Sen-Telegraph*, *Seattle-Post-Intelligencer*, [and] *Washington Herald*” (154). Many decades later, this phrase would provide the title for a fictionalized film about Hirschfeld’s life: Rosa von Praunheim, dir., *Der Einstein des Sex* (Germany: Ventura Film, 1999). For more on Viereck, who also interviewed Eugen Steinach, see chapter 3 of this dissertation.

³⁵ Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom*, 157n4.

³⁶ George Sylvester Viereck, *Glimpses of the Great* (New York: Macaulay, 1930), 285.

³⁷ Magnus Hirschfeld, *Der urnische Mensch* (Leipzig: Max Spohr, 1903), 125; translation (with my alterations) from Lombardi-Nash in Hirschfeld, *Homosexuality*, 376.

Hirschfeld incorporated his ideas about sexual spectra (the *Zwischenstufentheorie*) into all of his major works.³⁸

Hirschfeld's theory of sexual intermediaries was the fundamental building block of his scientific and also of his political thinking. Although he did not give a full and detailed account of the theory until his book *Transvestites* (1910), its elements can be found even in his earliest sexological writing. In this section and the two following it I chart the evolution of Hirschfeld's thinking on sexual intermediacy over the first half of his career—that is, from the 1896 publication of *Sappho and Socrates* to the publications of *Transvestites* and *Homosexuality* in 1910 and 1914, respectively. In general, that evolution can be described as one of ever-increasing acknowledgement of the vast varieties and combinations of sexual characteristics. However, this variety was always understood ultimately in terms of variations on biological masculinity and femininity. Hirschfeld's thinking never completely escaped the mental event horizon of binary sex, but it represented perhaps the greatest possible expansion upon that model.

* * *

Hirschfeld's attempts to develop a spectral view of sex can be seen as early as his first major work, the 1896 pamphlet *Sappho and Socrates*. Here, Hirschfeld argued on embryological grounds that homosexuality should be understood as a natural variation within humanity. In Hirschfeld's view, every human possesses two sexual drives: one toward their own sex, and one

³⁸ To name only the most important volumes: Magnus Hirschfeld, *Geschlechtsübergänge. Mischungen männlicher und weiblicher Geschlechtscharaktere. (Sexuelle Zwischenstufen)* (Leipzig: W. Malende, 1905); Hirschfeld, *Die Transvestiten*; Hirschfeld, *Homosexualität*; Magnus Hirschfeld, *Sexualpathologie. Ein Lehrbuch für Ärzte und Studierende*, 3 vols. (Bonn: Marcus & Weber, 1917–20); Magnus Hirschfeld, *Geschlechtskunde*, 5 vols. (Stuttgart: Julius Püttmann, 1926–30). Important early treatments of the idea can also be found in Hirschfeld, *Sappho und Sokrates*; and Hirschfeld, *Der uralte Mensch*.

toward the other sex. As a classification device, the strength of these drives could be ranked from 1–10. In general, these drives are reciprocal, such that strength in one means weakness in the other (see fig. 4.4); however, in certain cases (such as that of “*Anästhesia sexualis*,” or asexuality) this rule could be broken.³⁹ Like Karl Heinrich Ulrichs and Richard von Krafft-Ebing before him, Hirschfeld held that humans begin life as bisexual organisms possessing both male and female somatic characteristics.⁴⁰ In the growth of a “normal [*normale*]” woman, the female characteristics develop further, while the male elements atrophy; the woman’s psyche, missing the atrophied male somatic characteristics, then develops a drive toward men, “like a yearning desire for the once-held, lost possession.”⁴¹ *Mutatis mutandis*, the same happens for “normal” men. However, for some people the psyche instead develops a desire for the present (rather than the atrophied) sexual characteristics, or else develops a desire for both the present and for the atrophied characteristics. Hirschfeld thus argued that there are not two, but rather six “possibilities of drive regulation” (*Möglichkeiten der Triebregulierung*): “normal” men and women; male and female bisexuals (*Seelenzwitter*; lit. “soul hermaphrodites”); and male and female *Urnings* (see fig. 4.4).⁴²

³⁹ Hirschfeld, *Sappho und Sokrates*, 6–8.

⁴⁰ By his own admission, Hirschfeld’s embryological argument in *Sappho* is quite similar to those advanced previously by Ulrichs and Krafft-Ebing. However, he later claimed that, at the time, he had been unfamiliar with that aspect of those authors’ work. Hirschfeld, *Homosexualität*, 352–53 [412]. Both authors are cited in *Sappho* (although only briefly in Ulrichs’s case), but not with respect to embryology.

⁴¹ Hirschfeld, *Sappho und Sokrates*, 11; “wie ein sehndendes Verlangen nach dem einst innegehabten, verloren gegangenen Besitz.”

⁴² *Ibid.*, 11–15.

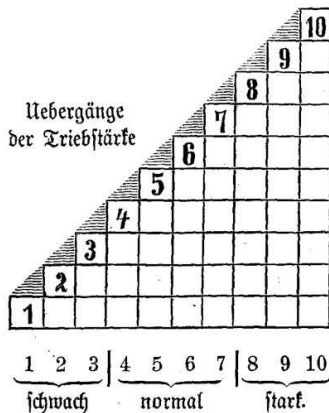
— 7 —

I. Trieb-Richtung oder Liebesqualität.

- A. Drang zum anderen Geschlecht.
- B. Drang zum eigenen Geschlecht.
- A + B oder C. Drang zu beiden Geschlechtern.

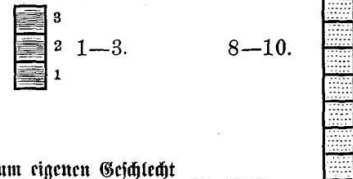
II. Triebstärke oder Liebesquantität.

scheinbarer Mangel (unmerkliches Rudiment)	= 1	} unbeeinflussbar.
fast gleichgültig	= 2	
kalt	= 3	
kühl	= 4	} durch Uebung, <u>Schonung</u> , Erziehung, <u>Suggestion</u> beeinflussbar.
lau	= 5	
warm	= 6	
sehr warm	= 7	
heiß	= 8	} ununterdrückbar (schwer oder nicht zu beherrschen).
leidenschaftlich	= 9	
wilde Gier	= 10	



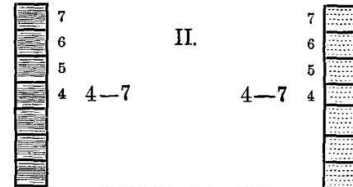
— 14 —

I.



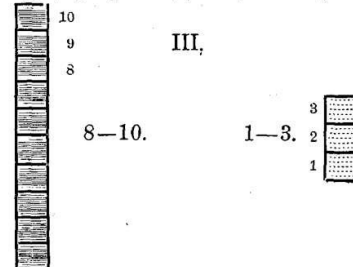
- A. Trieb zum eigenen Geschlecht rudimentär bis schwach (unterhalb der Schwelle der Beeinflussungsmöglichkeit.)
- B. Trieb zum anderen Geschlecht stark entwickelt (nicht unterdrückbar.)

Der volle Mann und das volle Weib.



- A. Trieb zum eigenen Geschlecht in Mittelstärke (durch Uebung, Schonung, Erziehung, Suggestion zc. beeinflussbar.)
- B. Trieb zum anderen Geschlecht in Mittelstärke (durch Uebung, Schonung, Erziehung, Suggestion zc. beeinflussbar.)

Der geistige Hermaphrodit, Seelenzwitler.



- A. Trieb zum eigenen Geschlecht voll entwickelt (nicht oder wenig beeinflussbar)
- B. Trieb zum anderen Geschlecht rudimentär

Der volle Urning.

Figure 4.4: Hirschfeld's six-fold schema of sexual orientation from *Sappho and Socrates*. In these graphs, the numbers 1–10 represent the strength of a person's drive toward a particular sex.⁴³

Although Hirschfeld did not go so far as to declare that these six sexual orientations constitute six different sexes, he emphasized that they should be thought of as biologically distinct. Like Weininger, Rüling, Mayreder, and Steinach, Hirschfeld described sexual development using spatial metaphors that imply spectrality. For example, he thought it was a “riddle” why in any given case the fetal gonads would develop in a “male... [or] female direction

⁴³ Ibid., 7; 14.

[*Richtung*].”⁴⁴ He referred to persons with “normal” sexual development as “full males” and “full females,” implying that “full Urnings” possess mixed sexual biology. (This was implied more directly for bisexuals, since Hirschfeld used terminology of hermaphroditism to describe them.) Because these distinctions arise during fetal development, such orientations should be considered as natural. In one particularly vivid phrase, Hirschfeld exclaims that “The sex instinct adheres ineradicably to the nascent mass of cells.”⁴⁵

Sappho and Socrates contained Hirschfeld’s first published version of a sexual spectrum. In theory, his categorization of drive strength could produce a hundred (10 x 10) different sexual varieties; in practice, however, his theory of embryological sexual development limited the number of varieties to the six fairly broad categories described above, with room for more localized variation within each. Already this represented a significant expansion upon traditional ideas of binary sex, gender, and sexuality (although, to be sure, Hirschfeld did not always distinguish clearly between these ideas). In the coming years, however, the number of potential varieties would escalate exponentially. Compared to his later work, *Sappho* also placed significantly less emphasis on the somatic hermaphroditism of homosexuals (i.e., on the femininity of male homosexuals and the masculinity of female homosexuals). If anything, Hirschfeld’s argument here implied that it was actually ‘normal’ people who were hermaphroditic. As he wrote, “The rule is that with the development of the external parts in the masculine direction, the instinctual center is strengthened into a woman, while with the formation of the female sexual characteristics the fibers of affection [*Neigungsfasern*] become a

⁴⁴ Ibid., 10

⁴⁵ Ibid., 18; “Der Geschlechtstrieb haftet sich unausrottbar der werdenden Zellenmasse an.”

man.”⁴⁶ Under this theory, it would seem that it is actually *homosexuals* rather than *heterosexuals* who are united as one sex in their body and soul—meaning that, in a certain sense, it is the ‘normals’ rather than the homosexuals who exist as sexual intermediaries.⁴⁷ But this implication of Hirschfeld’s thinking in *Sappho* remained only an implication, one that was also undercut by his use of terms such as “normal” and “full woman” or “full man” to describe heterosexual people. In any case, in Hirschfeld’s later work, perhaps because of the increasing influence of Ulrichs on his thinking, he would come to argue exactly the opposite of this implication—namely, that sexual desire for a man is always feminine, and sexual desire for a woman always masculine.

The Theory of Sexual Intermediaries: Objective Diagnoses

In 1899, Hirschfeld opened the first issue of the *Jahrbuch für sexuelle Zwischenstufen* with the following words:

Every physical and psychic [*geistige*] characteristic [*Eigenschaft*] that one regards as typical for the male sex, can, exceptionally, occur in women; and every peculiarity [*Eigentümlichkeit*] that is generally held to be female can occasionally occur in men. Thus originates an entire series of particular individualities, whose natures show partly physical, partly psychic, and partly physical and psychic characteristics of the other sex. This journal is first of all devoted to the investigation and understanding of these

⁴⁶ Ibid., 11; “Die Regel ist, daß mit der Entwicklung der Außenteile in männlicher Richtung das Triebcentrum zum Weibe erstarkt, während mit der Bildung der weiblichen Geschlechtscharaktere die Neigungsfasern zum Manne sich entwickeln.”

⁴⁷ This implication (viz., of the total masculinity of gay men) may also explain the early support of “masculinist” homosexual thinkers (such as Benedict Friedlaender and Adolf Brand) for Hirschfeld and the SHC. As Harry Oosterhuis notes, “Brand began his career as a homosexual activist in 1896 when he met Hirschfeld after having read *Sappho und Sokrates*”; it is not difficult to believe that Brand may have read into Hirschfeld’s text a fuller support for the masculinist idea of homosexuality than the author intended. Harry Oosterhuis, introduction to section II, in *Homosexuality and Male Bonding in Pre-Nazi Germany: The Youth Movement, the Gay Movement, and Male Bonding before Hitler’s Rise: Original Transcripts from Der Eigene, the First Gay Journal in the World*, ed. Harry Oosterhuis, (New York: Harrington Park, 1991), 29.

intermediaries [*Zwischenstufen*], these hermaphrodites [*Zwitter*] in the broadest sense of the word.⁴⁸

It is notable that in this quotation, which comprised the entire introductory paragraph of the first issue of the *Jahrbuch*, contained no direct references to homosexuality. Although anyone who was likely to have read this paragraph in 1899 would have clearly understood what Hirschfeld was talking about, it was not until the fourth paragraph of the foreword that he used a term (*Konträrsexuellen*; people with contrary sexuality) that directly referred to sexual orientation.⁴⁹ Instead, Hirschfeld seems to have found it necessary to begin by making a blanket declaration of the *possibility* of sexual intermediacy. If one did not accept the existence of such *Zwischenstufen*, then there would be no point in reading further.

The first volume of the *Jahrbuch* (which also contained an article by Hirschfeld himself) was Hirschfeld's first major academic publication.⁵⁰ By opening the journal with this paragraph,

⁴⁸ Magnus Hirschfeld, "Vorwort," *Jahrbuch für sexuelle Zwischenstufen* 1 (1899): 1–3, at 1; "Jede körperliche und geistige Eigenschaft, die man als dem männlichen Geschlecht zukömmlich ansieht, kann ausnahmsweise bei Frauen und jede gemeinhin für weiblich gehaltene Eigentümlichkeit kann vereinzelt bei Männern auftreten. So entstehen eine ganze Reihe besonders gearteter Individualitäten, die teils körperliche, teils seelische, zum Teil körperliche und seelische Merkmale des anderen Geschlechts aufweisen. Der Erforschung und Erkenntnis dieser Zwischenstufen, dieser Zwitter in des Wortes weitgehendster Bedeutung ist dieser Jahrbuch in erster Linie gewidmet."

⁴⁹ *Ibid.*, 2. It should be noted that although 'contrary sexuality' generally connotes people who find themselves attracted to others of the 'same' sex as them, the term is not an exact synonym for 'homosexuality,' particularly as that latter word is used today. As David Halperin argues, "contrary sexuality" implied an *identification with* the 'opposite' sex, rather an *attraction to* one's own sex. In other words, it referred more to gender deviance than to sexuality deviance. Halperin, "How to Do the History of Male Homosexuality," 128. For a more detailed investigation of this terminological history, see George Chauncey, "From Sexual Inversion to Homosexuality: Medicine and the Changing Conceptualization of Female Deviance," *Salmagundi*, no. 58/59 (1982–3): 114–46.

⁵⁰ One might arguably count his 1896 pamphlet *Sappho und Sokrates* as his first academic publication on homosexuality—Charlotte Wolff, for example, considers *Sappho* to be Hirschfeld's "*Erstling* (first sexological work)." Wolff, *Magnus Hirschfeld*, 35. However, *Sappho* strikes me as aimed toward a less specialized audience than that of *Jahrbuch*.

Hirschfeld signaled that his work would follow in the footsteps of Karl Heinrich Ulrichs—who had argued that homosexuality constitutes a variety of inborn psychic hermaphroditism—rather than in the footsteps of those who had argued that homosexuality is an acquired syndrome or disease. Hirschfeld further signaled his indebtedness to Ulrichs by publishing in the same volume four ‘coming out’ letters from Ulrichs to his family.⁵¹

Ulrichs had famously described homosexuality (or *Uranismus*, to use his terminology) with the Latin phrase “anima muliebris virili corpore inclusa” (a female soul confined in a male body). In his view, homosexuality is best explained as an inborn condition, whereby a person with a generally male body possesses a woman’s psyche—including her sexuality.⁵² As Hubert Kennedy notes, “according to Ulrichs, sexual attraction to men is always of a female nature, [so] it therefore follows that the psyche of those who are attracted to men must be female.”⁵³ In this

⁵¹ Karl Heinrich Ulrichs, “Vier Briefe,” *Jahrbuch für sexuelle Zwischenstufen* 1 (1899): 36–70. Hirschfeld had also (one year previously) written an introduction to a republication of Ulrichs’s first work: Magnus Hirschfeld, “Vorwort,” in “*Vindex*.” *Social-juristische Studien über mann-männliche Geschlechtsliebe*, by Karl Heinrich Ulrichs (Leipzig: Max Spohr, 1898), 7–14. For more on Ulrichs, see Kennedy, “Karl Heinrich Ulrichs”; and Leck, *Vita Sexualis*.

⁵² Ulrichs’s term “Urning” (and, in earlier writings, “Uranian”) derives from Pausanias’s speech in Plato’s *Symposium*. There Pausanias claims that there are two Aphrodites; one is the daughter of Uranus and represents heavenly love, while the other is the daughter of Dione and represents common love. (His term corresponding to heterosexuals was “Dioning.”) Plato, *The Symposium*, in *The Symposium and The Phaedrus: Plato’s Erotic Dialogues*, trans. William S. Cobb (Albany: State University of New York Press, 1993), 11–59, at 21–25 (lines 180c–185c). Although Ulrichs mostly wrote about “Urninge”—people with male bodies and female sexualities—his theory also included “Urninginnen” (sometimes “Urninden”)—people with female bodies and male sexualities. By his final scientific work on homosexuality (*Critical Arrows*, 1879) he had expanded his theory even further, to include a wide range of what we today would call sexualities and gender expressions. See Karl Heinrich Ulrichs, *The Riddle of “Man-Manly” Love: The Pioneering Work on Male Homosexuality*, trans. Michael A. Lombardi-Nash (1864–79; Buffalo, N.Y.: Prometheus Books, 1994), 2:687–88. For a history of Ulrichs’s terminology, focusing particularly on a comparison of Ulrichs’s term “Urning” with Karl-Maria Kertbeny’s term “homosexuality,” see Leck, *Vita Sexualis*, chapter 2.

⁵³ Kennedy, “Karl Heinrich Ulrichs,” 29.

model, sexual desire is presented as always being essentially heterosexual. The *Urning* acts according to ‘normal’ standards of sexuality, from the perspective of his female soul. Although this idea (of the essential heterosexuality of desire) is not particularly present in *Sappho and Socrates*, it quickly became a cornerstone of Hirschfeld’s *Zwischenstufentheorie*.

Hirschfeld became significantly more knowledgeable about Ulrichs’s work subsequent to the publication of *Sappho* in 1896. By 1898, he was sufficiently well-acquainted with Ulrichs that he sponsored a reprint series of Ulrichs’s books, with himself serving as editor.⁵⁴ Hirschfeld was particularly enamored of the idea that the homosexual is a sort of hermaphrodite. However, he would greatly expand on Ulrichs’s tendency toward biological explanation, eventually relying upon new endocrinological ideas about the etiology of homosexuality to do so.⁵⁵ In 1920, he wrote that recent research in endocrinology (particularly that of Eugen Steinach), when confirmed, would soon prove that “The decisive factor in contrary sexual feeling is therefore not, as *Ulrichs* believed, an *anima inclusa*, but rather a *glandula inclusa* [i.e., not a feminine soul, but rather a feminine gland].”⁵⁶ Although Hirschfeld’s views on homosexuality changed over the course of his life, he was consistent (after *Sappho*) in regarding homosexuality as a condition of biological intermediacy between the “full male” and the “full female.”

By 1899 at the latest, Hirschfeld had moved decisively toward regarding female homosexuals as masculinized women, and male homosexuals as feminized men. In his

⁵⁴ Wolff, *Magnus Hirschfeld*, 36. See also Hirschfeld’s introduction to the first volume: Hirschfeld, “Vorwort,” 1898.

⁵⁵ See chapter 3 of this dissertation.

⁵⁶ Magnus Hirschfeld, *Die Homosexualität des Mannes und des Weibes*, 2nd ed. (Berlin: Louis Marcus Verlagsbuchhandlung, 1920), xiv; “Das Entscheidende bei der konträren Sexualempfindung ist also nicht, wie *Ulrichs* vermeinte, eine *anima inclusa*, sondern eine *glandula inclusa*.”

“Objective Diagnose der Homosexualität,” published in the first volume of the *Jahrbuch*, Hirschfeld argued that *Urnings* typically display feminine physical characteristics such as “congenital rudimentary breasts” and “long hair,” and that it is necessary to conduct further research into other areas where homosexuals might display a physically intermediate nature.⁵⁷ Toward the end of the essay, Hirschfeld also articulated a law of sexual attraction for homosexual men that anticipated certain aspects of the theory that Otto Weininger would develop a few years later in *Sex and Character*.⁵⁸ In Hirschfeld’s view,

The more feminine a man is (the more he is a Weibling), the more he loves pronounced male types (*‘drauci’*), and the more the masculine traits dominate in an Urning, the more he loves individuals who have something feminine and delicate in appearance and character, or who are adolescents—but feminine Urnings are too feminine for him. The same goes for the woman of contrary sexuality.⁵⁹

The implication here is that all gay men are at least somewhat feminine, and all lesbians are at least somewhat masculine. In other words, somewhat contrary to the position he presented in

⁵⁷ Magnus Hirschfeld, “Die objektive Diagnose der Homosexualität,” *Jahrbuch für sexuelle Zwischenstufen* 1 (1899): 4–35, at 5–6. As one example of further research, Hirschfeld mentions that he would like to know whether an Urning’s hemoglobin count more fully resembles that of a man or that of a woman. (Males typically have slightly more hemoglobin.) It is also notable that this directive to further research is made with an explicit invocation of Ulrichs.

⁵⁸ Otto Weininger, *Geschlecht und Charakter. Eine Prinzipielle Untersuchung*, 10th ed. (1903; Vienna: Wilhelm Braumüller, 1908), part I, chapter 3.

⁵⁹ Hirschfeld, “Objektive Diagnose,” 26; “Je femininer also ein Mann ist (Weiblinge), umso mehr liebt er ausgesprochen männliche Type (*‘drauci’*) je mehr im Urning die männlichen Züge überwiegen, umsomehr liebt er Individuen, die im Äussern und Charakter etwas weiblich-zartes haben, Jünglinge, wobei ihm jedoch feminine Urninge zu weibisch zu sein pflegen und das gleiche gilt für das konträrsexuelle Weib.” “Weibling” was Ulrichs’s term, in his later writings, for a feminine Urning (which is also a typical Urning). Ulrichs, *Riddle of “Man-Manly” Love*, 2:687–88. ‘Drauci’ is a Latin word, which in Hirschfeld’s time was typically translated as “sodomites,” but which the Romans used to mean “one who performs feats of strength in public.” Alexander Nikolaev, “Latin *Draucus*,” *Classical Quarterly* 64, no. 1 (2014): 316–20, at 316. Ulrichs, who was an accomplished scholar of Latin, seems to have intended both meanings in the few places in his *oeuvre* where he used the term; see, for example, Ulrichs, *Riddle of “Man-Manly” Love*, 1:308–9. Given his familiarity with Ulrichs’s work by this point, Hirschfeld probably also intended both meanings of “drauci.”

Sappho, it was now homosexuals—rather than “normalsexual” people—who should be thought of as sexual intermediaries.

However, homosexuality was not the only category of intermediacy in “Objektive Diagnose.” Building on the implications of his foreword to the first volume of the *Jahrbuch*, Hirschfeld significantly broadened his vision of a sexual spectrum in this essay. He now classified “sexual difference [*Geschlechtsunterscheidung*]” according to a five-fold schema, in which each category contained the possibility for intermediacy. These categories were: 1) Gonads and gametes; 2) Other primary sexual organs; 3) Secondary sexual characteristics that develop during puberty; 4) Psychic characteristics; and 5) Sex drive.⁶⁰ Homosexuals, he held, are intermediaries of the fifth group. Further, although the title of the article promised only an “objective diagnosis of *homosexuality*,” Hirschfeld also discussed at length intermediaries of the other categories, including “true” hermaphrodites; pseudohermaphrodites; other physical intermediaries (such as men with breasts and women with beards); and mental intermediaries (such as “women who are more suited to the public sphere and men who are more suited to the domestic sphere”)—respectively corresponding to intermediaries of the first, second, third, and fourth groups.⁶¹

Hirschfeld held that because a given individual may, in theory, be intermediate in any or all of these categories, there are “numerous transitions and deviations” observable among the human population—although, in practice, variation is more likely to be found the later a trait arises in a person’s development. In contrast, “The earlier a sexual characteristic is established,

⁶⁰ Hirschfeld, “Objektive Diagnose,” 8–9.

⁶¹ *Ibid.*, 16–23; quotation at 21; “Es giebt Frauen, die mehr an die Oeffentlichkeit [sic] und Männer, die mehr in die Häuslichkeit passen.”

the more surely nature works.”⁶² In one particularly vivid example, Hirschfeld cited the case of Josephine Buda, whom he referred to as “the *Mannweib*” (man-woman), and who had been a patient of his doctoral examiner Rudolf Virchow.⁶³ “Decorated with a strong beard and long head of hair, she looks like a man from the front, completely like a woman from behind. She wears men’s clothing, is happily married to a man, but she has sex with women, regularly menstruates, and has had two miscarriages.”⁶⁴ Based on Hirschfeld’s description, Buda would seem to occupy several categories of intermediacy: as a woman who can grow a beard (group 3); as a woman who desires to wear men’s clothes (group 4); and as a woman who has sex with women, and possibly also with men (group 5). Additionally, because Hirschfeld introduces the case in the context of a discussion of pseudohermaphrodites, it may be assumed that she can also be classed in the second group of intermediacy as well.⁶⁵ This assumption is bolstered by two images included in the article. The first depicts a rather ‘normal’-looking person wearing men’s clothing and a long beard; the second depicts the same person, still wearing her beard, in a woman’s dress and stockings, with her legs opened to reveal a penile shaft accompanied by a vulva, (see fig. 4.5). This second image seems erotic in character, and its posing of the so-called

⁶² Ibid., 15; “Es entstehen dadurch zahlreiche Uebergänge und Abweichungen... Je frühzeitiger ein Geschlechtsmerkmal festgelegt zu werden pflegt, umso sicherer arbeitet die Natur.”

⁶³ Ibid., 17. Hirschfeld’s definite article hints that he perhaps expected his readers to already be familiar with Buda. Her name is not given in “Objektive Diagnose”; however, Hirschfeld named her in a later publication. Hirschfeld, *Geschlechtsübergänge*, [60].

⁶⁴ Hirschfeld, “Objektive Diagnose,” 17; “Mit einem starken Bart und langem Kopfhaar geschmückt, sieht sie von vorne betrachtet einem Manne, von hinten einer Frau vollkommen gleich. Sie trägt Herrenkleidung, ist mit einem Manne glücklich verheiratet, zieht aber den Verkehr mit Frauen vor, menstruiert regelmässig und hat zwei Fehlgeburten gehabt.

⁶⁵ On pseudohermaphroditism, a turn-of-the-century term for people who possessed ambiguous genitalia but not ambiguous gonads, see Alice Domurat Dreger, *Hermaphrodites and the Medical Invention of Sex* (Cambridge, MA: Harvard University Press, 1998); and chapter 3 of this dissertation.

Mannweib recalls that of Gustave Courbet's subject in his 1866 painting, *L'Origine du monde* (see fig. 4.6).⁶⁶ If Courbet's painting provided a reminder that all humans originate from a woman's sexual organs, then this second image subtly advocates for the idea (supported by Hirschfeld) that all human life begins as hermaphroditic.⁶⁷

⁶⁶ My thanks to Sarah Berkowitz for pointing out this resemblance to me.

⁶⁷ Whether this was Hirschfeld's intention, I cannot say. However, it should be noted that Hirschfeld does not indicate the source of these images. Given the erotic character of the second image, I am skeptical that they come from Virchow's report on the patient to the Berliner medizinische Gesellschaft. It is possible (although here I engage in pure speculation) that Hirschfeld had them commissioned himself. A portion of this image also appears in Hirschfeld, *Geschlechtsübergänge*, [59]. On Hirschfeld's use of photographs, see Kathrin Peters, "Anatomy Is Sublime: The Photographic Activity of Wilhelm von Gloeden and Magnus Hirschfeld," trans. Nicholas Grindell, in *Not Straight from Germany*, ed. Taylor, Timm, and Herrn, 170–90.

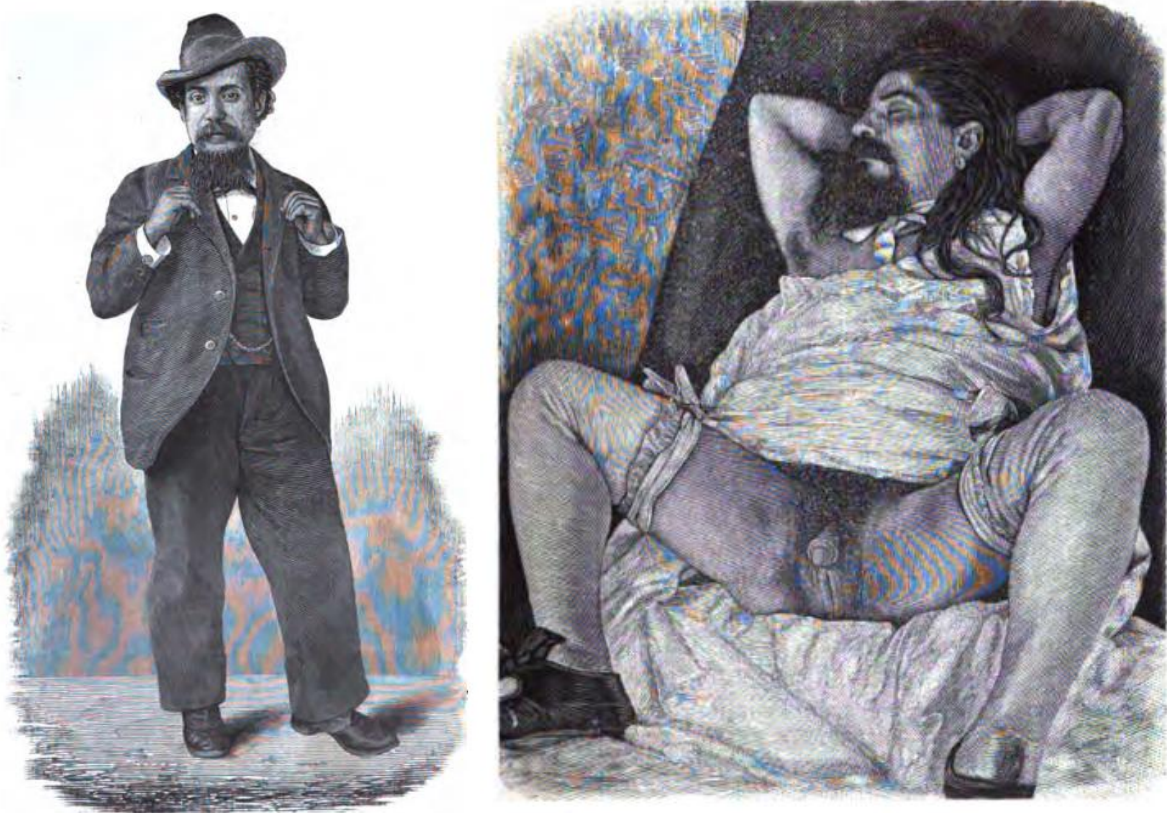


Figure 4.5: Images of a “man-woman” (*Mannweib*) pseudohermaphrodite⁶⁸



Figure 4.6: Gustave Courbet, *L'Origine du monde* (1866)⁶⁹

⁶⁸ Hirschfeld, “Objektive Diagnose,” 18–19.

⁶⁹ Gustave Courbet, *L'Origine du Monde*, 1866, Musée d'Orsay, Paris. Photograph by Carl Frederick, from Wikimedia, <https://commons.wikimedia.org/wiki/File:Origin-of-the-World.jpg>.

The Theory of Sexual Intermediaries: Mature Theory

Over the course of the next decade, Hirschfeld expanded his theory of sexual intermediaries further. In 1905, he published a short work with numerous photographs entitled *Geschlechtsübergänge* (Sexual transitions). There he advanced the argument that “all internal and external organs present a male and a female average form. The statement put forward by the venerable Danish zoologist [Johannes] Steenstrup, ‘Sex is present everywhere in the body,’ is gaining more and more plausibility, and one will hardly go wrong in recognizing a male or female index in both the fertilized egg cell and in every single cell of the body.”⁷⁰ This claim is similar to one that Weininger had advanced two years earlier in *Sex and Character*, and its presence here may indicate a new influence of Weininger on Hirschfeld’s thinking.⁷¹ As was also the case with Weininger, this idea of omnipresent somatic sex serves to anchor the author’s argument—which Hirschfeld now made even more enthusiastically than he had previously—that a near infinite number of sexual intermediaries exist between the “ideal types” of the “full man” and “full woman.” The breadth of Hirschfeld’s conception of sexual intermediacy is anticipated on the cover of the book, which features a quotation attributed to Leibniz: “Everything happens by degrees in nature, and nothing by leaps.” The quotation is repeated on the title page, but this

⁷⁰ Hirschfeld, *Geschlechtsübergänge*, 10; “vielmehr sehen wir, daß sämtliche inneren und äußeren Organe eine männliche und weibliche Durchschnittsform darbieten. Der von dem alten dänischen Zoologen Steenstrup aufgestellte Satz: ‘Das Geschlecht steckt überall im Körper’ gewinnt immer mehr an Wahrscheinlichkeit und man wird schwerlich fehlgehen, wenn man sowohl der befruchteten Eizelle, als jeder einzelnen Körperzelle einen männlichen oder weiblichen Index zuerkennt.

⁷¹ Weininger also made his argument that sex is present in every cell of the body in the context of Steenstrup’s theories, and Hirschfeld here used the same word (*der Index*) as Weininger to refer to the overall masculinity or femininity of a given cell, organ, or organism. Weininger, *Geschlecht und Charakter*, 15, 28. *Geschlechtsübergänge* is also, as far as I know, the first work in which Hirschfeld cited Weininger’s work (although he did not cite him at this particular point). Hirschfeld, *Geschlechtsübergänge*, 15. On Weininger’s theory of omnipresent cellular sex, see chapter 1 of this dissertation.

time attributed to three authors: “Comenius, Leibniz, Linné [Linnaeus].”⁷² In adding allusions to the pedagogue Comenius and to the taxonomist Linnaeus, Hirschfeld highlighted the importance of discovering information about new sexual varieties and educating the public about them.

At about this time, other sexologists began to take notice of Hirschfeld’s theory—although not always approvingly. Critiques of varying intensity of Hirschfeld and his *Zwischenstufen* appeared in works by Auguste Forel, Benedict Friedlaender, and Iwan Bloch.⁷³ Forel proclaimed in *The Sexual Question* (1905) that certain aspects of the theory of “so-called sexual intermediaries... must be clearly explained by Hirschfeld and the ‘school of Weininger the Insane.’”⁷⁴ Later in the book, he argued that “the whole theory of intermediaries breaks down, because *logically a true sexual intermediary should surely feel bisexual or hermaphroditic, but not homosexual.*”⁷⁵ Bloch, despite usually being a scientific and political ally of Hirschfeld, criticized the *Zwischenstufentheorie* along similar lines in *The Sexual Life of*

⁷² Hirschfeld, *Geschlechtsübergänge*, book cover; 1; “Tout va par degrés dans la nature et rien par sauts.” J. Edgar Bauer has tracked the source of the quotation to Leibniz’s *Nouveaux essais sur l’entendement humain* (1704). J. Edgar Bauer, “The Sexologist and the Poet: On Magnus Hirschfeld, Rabindranath Tagore, and the Critique of Sexual Binarity,” *Rupkatha Journal on Interdisciplinary Studies in Humanities* 2, no. 4 (November 2010): 447–70, at 464n21.

⁷³ Benedict Friedlaender, *Die Renaissance des Eros Uranios: Die physiologische Freundschaft, ein normaler Grundtrieb des Menschen und eine Frage der männlichen Geselligkeitsfreiheit* (Schmargendorf-Berlin: Otto Lehmann, 1904); Auguste Forel, *Die sexuelle Frage. Eine naturwissenschaftliche, psychologische, hygienische und soziologische Studie für Gebildete*, 8th & 9th ed. (1905; München: E. Reinhardt, 1909); Iwan Bloch, *Das Sexualleben unserer Zeit in seinen Beziehungen zur modernen Kultur*, 2nd & 3rd ed. (1906; Berlin: L. Marcus, 1907).

⁷⁴ Forel, *Die sexuelle Frage*, 29; “sogenannte sexuelle Zwischenstufen... Dies muss einmal deutlich Hirschfeld und den ‘Schülern des geisteskranken Weiningers’ erklärt werden.” Interestingly, this passage is missing from the 1908 English translation: Auguste Forel, *The Sexual Question: A Scientific, Psychological, Hygienic and Sociological Study*, trans. C. F. Marshall (New York: Rebman, 1908), 28.

⁷⁵ Forel, *Die sexuelle Frage*, 282; “Die ganze Zwischenstufentheorie scheidet aber ferner daran, dass logischerweise eine wirkliche sexuelle Zwischenstufe wohl bisexuell oder hermaphroditisch, aber nicht homosexuell fühlen sollte.”

Our Time (1906). In his view, Hirschfeld's ideas "explain the homosexual phenomenon, but, incidentally, falsely mix in the typical hermaphroditic condition. ... [The theory] fails *when homosexuality occurs in the absence of every deviation from the type*; for example, in every case where masculine individuals with completely normal masculine bodies feel strongly homosexual already in childhood, long before puberty."⁷⁶ These interlocutors argued that some (Bloch) or most (Forel) homosexuals do not display signs of physiological intermediacy, and that Hirschfeld's theory thus failed to explain their existence. These critiques proceeded from the idea that a sexual intermediary must be *intermediary*, thus accusing Hirschfeld of inconsistency—and, by implication, of an overly monist biological framework.⁷⁷

Bloch's criticism—that in Hirschfeld's theory, physiological intermediacy *must* accompany intermediacy of sexuality—was not strictly accurate. However, as we have already seen above, Hirschfeld's writing on sexual intermediaries since 1899 did assume that somatic and mental intermediacy (including homosexuality) *tend* to accompany each other. Hirschfeld never renounced this aspect of his theory; indeed, if anything his belief in this tendency only intensified as he became aware of new developments in endocrinology, which seemed to him in

⁷⁶ Bloch, *Sexualleben unserer Zeit*, 588; "die homosexuellen Phänomene erklärt, übrigens fälschlich die typisch hermaphroditischen Zustände mitheranzieht... Aber sie versagt da, wo *Homosexualität bei Fehlen jeder Abweichung vom Typus auftritt*, also z. B. in jenen Fällen, wo männliche Individuen mit durchaus normalem männlichen Körperbau bereits von Kindheit an, lange vor der Pubertät streng homosexuell empfanden."

⁷⁷ Friedlaender criticized the theory on other grounds, namely that homosexual men should be thought of as hyper-masculine, rather than feminized. In Friedlaender's view, homosexual women—indeed, women in general—should not be thought of at all. (See note 47, above, and note 132, below.) On biological monism as a framework, see the Mayreder section of chapter 1 of this dissertation. On Hirschfeld's monism specifically, with particular reference to the influence of Ernst Haeckel on his thought, see Dickinson, *Sex, Freedom and Power*, 159–60; as well as Vern Bullough's introduction to the English translation of *Homosexuality*, 15–16.

the 1910s to finally offer a true biological substratum for contrary sexual feeling.⁷⁸ At the same time, Hirschfeld usually emphasized that this was *only* a tendency, and that the various axes of sexual variation have no necessary correlation with each other. As he wrote in his enormous 1914 study, *The Homosexuality of Men and Women* (sometimes described as his *magnum opus*),

Both opinions [viz., that homosexuality is always connected with somatic intermediacy and that it is totally independent of such] rest on an error [*Irrtum*] explained by the lack of experience [*aus einer zu geringen Erfahrung erklärt*]. That homosexuals relatively frequently exhibit features of the other sex psychologically and physically can be denied only by people who know nothing about homosexuality. But these features are not absolutely prerequisite. When H[einrich] Marx once said that “an Urning is not a man, but rather must be counted among the female sex,” then we must assume that obviously he only saw very feminine Urnings. But it is no less misguided to negate the symptomatic significance of the signs just because they are not always provable.⁷⁹

In other words, every case must be taken on its own merits, and all variation combinations are possible. Nevertheless, general trends (or, rather, what appeared to Hirschfeld to be general trends) should not be discarded.

Perhaps partly in response to criticism such as that of Forel and Bloch, in the 1910s Hirschfeld laid out his theory of sexual intermediaries in far more explicit detail than he had done previously. His first major account of the theory—indeed, as far as I know, the first time Hirschfeld actually used the term *Zwischenstufentheorie*—came in his book *Transvestites* (1910).⁸⁰ In contrast to the bulk of his prior publications, *Transvestites* aimed to provide a theory

⁷⁸ See note 56, above, as well as chapter 3 of this dissertation.

⁷⁹ Hirschfeld, *Homosexualität*, 222 [270]; translation altered slightly. For the interior quotation, Hirschfeld cites Heinrich Marx, *Urningssliebe* (Leipzig: 1875), 8. For an example of *Homosexualität* being referred to as Hirschfeld’s *magnum opus*, see Dickinson, *Sex, Freedom and Power*, 158.

⁸⁰ Other sexologists had already used the term *Zwischenstufentheorie* with reference to Hirschfeld’s ideas. In *Transvestites*, Hirschfeld writes that he first saw the term in the 1905 Forel passage cited above (see note 75). Hirschfeld, *Die Transvestiten*, 293–94n [228–29]. Hirschfeld also published an explication of the theory in an article in the same year (1910); large sections of the article contain the same text found in the relevant chapter of *Transvestites*, although there are

not of homosexuality, but of crossdressing, for which he coined the term *transvestism*.⁸¹

Hirschfeld's work was the first book-length study of the phenomenon. Most doctors at the time (including Hirschfeld, by his own admission) considered crossdressing to be an expression of homosexuality.⁸² However, as he conducted his study Hirschfeld came to believe that the two phenomena are totally different. Although transvestism and homosexuality both represent forms of male feminization and female virilization, they occupy different spheres of life, and one cannot be taken as absolute evidence of the other. Indeed, almost all of the patients in the case studies that Hirschfeld presents in *Transvestites* seemed in his estimation to be thoroughly heterosexual.

The chapter entitled "Theory of Sexual Intermediaries" appears in *Transvestites* at the end of the differential diagnosis section.⁸³ In the context of the book as a whole, it serves to answer the question: what are transvestites? Having argued that crossdressing cannot be understood as homosexuality, monosexuality (i.e., masturbatory narcissism), fetishism, masochism, or any of several other medicalized syndromes, Hirschfeld concluded that transvestism constitutes instead sexual intermediacy of a wholly different type. He argued that while the categories listed in the previous sentence are varieties of the sexual drive, crossdressing should be understood as a variety of the psyche. Hirschfeld contended that the sexual differences between men and women can be separated into four categories: "1) the sexual organs; 2) the

also significant textual differences. (I do not know whether he wrote the book or the article first). Magnus Hirschfeld, "Die Zwischenstufen-*'*Theorie," *Sexual-Probleme* 6 (1910): 116–36.

⁸¹ However, *Transvestites* was not Hirschfeld's first departure from the subject of homosexuality. For example, in 1901 he wrote a pamphlet addressing whether bicycling is healthy: *Für wen und wie ist das Radfahren gesund?* (Berlin: Tessaro-Verlag, 1901).

⁸² Hirschfeld, *Die Transvestiten*, 187–88 [147–48].

⁸³ *Ibid.*, 275–304 [215–36].

other physical characteristics; 3) the sex drive; 4) the other mental [*seelische*] characteristics.”⁸⁴

Although this new schema may seem to be a reduction from the five-fold system of variation introduced in “Objektive Diagnose,” it quickly becomes clear that Hirschfeld’s intentions here were to multiply the number of existing sexual types to a point of practical infinity.

Hirschfeld emphasized that variation in each category “appears in varying degrees” for any given person, and that “these characteristics can appear isolated or combined. ... every combination imaginable can occur, every possible combination of manly and womanly characteristics.”⁸⁵ To give an idea of the number of possible sexual configurations, Hirschfeld presented three tables, where he charted every permutation of “manly,” “womanly,” and “mixed” characteristics of his four categories (see fig. 4.7). In this way, he worked his way from the “absolute man [*Vollman*],” through the “complete hermaphrodite [*vollkommener Zwitter*],” to finally end up at the “full woman [*Vollweib*].”⁸⁶ This produced 3^4 , or eighty-one, total combinations. But then he went further. “Closer observation” reveals that one can subdivide each of the four categories, and so Hirschfeld listed four characteristics for each (although, as he noted, this “analysis could without difficulty verify many, many more individual features”).⁸⁷ Hirschfeld claimed that these sixteen different sexual characteristics can each be manly, womanly, or mixed (see fig. 4.7, bottom-right image). As with the previous analysis, each of the sixteen characteristics can also vary independently to create a different sexual combination.

⁸⁴ Ibid., 281 [219]; translation altered slightly.

⁸⁵ Ibid., 286 [223]. This statement also rebuts the criticism of Hirschfeld levied by Forel and Bloch.

⁸⁶ Ibid., 287nn2–3, 288n [224n, 225nn1–2].

⁸⁷ Ibid., 289 [225].

Multiplying out the number of possibilities here resulted in 3^{16} , or 43,046,721, different sexual configurations.

$A_m B_m C_m D_m$ ²⁾	$A_w B_m C_m D_m$	$A_{m+w} B_m C_m D_m$
$A_m B_w C_m D_m$	$A_w B_w C_m D_m$	$A_{m+w} B_w C_m D_m$
$A_m B_{m+w} C_m D_m$	$A_w B_{m+w} C_m D_m$	$A_{m+w} B_{m+w} C_m D_m$
$A_m B_m C_w D_m$	$A_w B_m C_w D_m$	$A_{m+w} B_m C_w D_m$
$A_m B_w C_w D_m$	$A_w B_w C_w D_m$	$A_{m+w} B_w C_w D_m$
$A_m B_{m+w} C_w D_m$	$A_w B_{m+w} C_w D_m$	$A_{m+w} B_{m+w} C_w D_m$
$A_m B_m C_{m+w} D_m$	$A_w B_m C_{m+w} D_m$	$A_{m+w} B_m C_{m+w} D_m$
$A_m B_w C_{m+w} D_m$	$A_w B_w C_{m+w} D_m$	$A_{m+w} B_w C_{m+w} D_m$
$A_m B_{m+w} C_{m+w} D_m$	$A_w B_{m+w} C_{m+w} D_m$	$A_{m+w} B_{m+w} C_{m+w} D_m$

Tabelle I.

$A_m B_m C_m D_w$	$A_w B_m C_m D_w$	$A_{m+w} B_m C_m D_w$
$A_m B_w C_m D_w$	$A_w B_w C_m D_w$	$A_{m+w} B_w C_m D_w$
$A_m B_{m+w} C_m D_w$	$A_w B_{m+w} C_m D_w$	$A_{m+w} B_{m+w} C_m D_w$
$A_m B_m C_w D_w$	$A_w B_m C_w D_w$	$A_{m+w} B_m C_w D_w$
$A_m B_w C_w D_w$	$A_w B_w C_w D_w$ ³⁾	$A_{m+w} B_w C_w D_w$
$A_m B_{m+w} C_w D_w$	$A_w B_{m+w} C_w D_w$	$A_{m+w} B_{m+w} C_w D_w$
$A_m B_m C_{m+w} D_w$	$A_w B_m C_{m+w} D_w$	$A_{m+w} B_m C_{m+w} D_w$
$A_m B_w C_{m+w} D_w$	$A_w B_w C_{m+w} D_w$	$A_{m+w} B_w C_{m+w} D_w$
$A_m B_{m+w} C_{m+w} D_w$	$A_w B_{m+w} C_{m+w} D_w$	$A_{m+w} B_{m+w} C_{m+w} D_w$

Tabelle II.

¹⁾ Die nachfolgende Berechnung der Zahl der Zwischenstufentypen habe ich in Gemeinschaft mit Prof. Dr. K. F. Jordan ausgeführt.
²⁾ Vollmann. ³⁾ Vollweib.

$A_m B_m C_m D_{m+w}$	$A_w B_m C_m D_{m+w}$	$A_{m+w} B_m C_m D_{m+w}$
$A_m B_w C_m D_{m+w}$	$A_w B_w C_m D_{m+w}$	$A_{m+w} B_w C_m D_{m+w}$
$A_m B_{m+w} C_m D_{m+w}$	$A_w B_{m+w} C_m D_{m+w}$	$A_{m+w} B_{m+w} C_m D_{m+w}$
$A_m B_m C_w D_{m+w}$	$A_w B_m C_w D_{m+w}$	$A_{m+w} B_m C_w D_{m+w}$
$A_m B_w C_w D_{m+w}$	$A_w B_w C_w D_{m+w}$	$A_{m+w} B_w C_w D_{m+w}$
$A_m B_{m+w} C_w D_{m+w}$	$A_w B_{m+w} C_w D_{m+w}$	$A_{m+w} B_{m+w} C_w D_{m+w}$
$A_m B_m C_{m+w} D_{m+w}$	$A_w B_m C_{m+w} D_{m+w}$	$A_{m+w} B_m C_{m+w} D_{m+w}$
$A_m B_w C_{m+w} D_{m+w}$	$A_w B_w C_{m+w} D_{m+w}$	$A_{m+w} B_w C_{m+w} D_{m+w}$
$A_m B_{m+w} C_{m+w} D_{m+w}$	$A_w B_{m+w} C_{m+w} D_{m+w}$	$A_{m+w} B_{m+w} C_{m+w} D_{m+w}$ ¹⁾

Tabelle III.

¹⁾ Vollkommener Zwitter.

Die von uns ins Auge gefassten Elemente wären etwa:

Eigenschaftsgruppe A. (Primäre Geschlechtsmerkmale.)		Eigenschaftsgruppe B. (Sekundäre Geschlechtsmerkmale.)	
1. Keimstock:	A ^I	1. Haarkleid:	B ^I
2. Ei- oder Samenleiter:	A ^{II}	2. Kehlkopf:	B ^{II}
3. Geschlechtshöcker:	A ^{III}	3. Brust:	B ^{III}
4. Geschlechtsrinne:	A ^{IV}	4. Becken:	B ^{IV}
Eigenschaftsgruppe C. (Tertiäre Geschlechtsmerkmale.)		Eigenschaftsgruppe D. (Quartäre Geschlechtsmerkmale.)	
1. Richtungsart:	C ^I	1. Gefühlsleben:	D ^I
2. Annäherungsart:	C ^{II}	2. Denktätigkeit:	D ^{II}
3. Gefühlsart:	C ^{III}	3. Beschäftigung:	D ^{III}
4. Betätigungsart:	C ^{IV}	4. Kleiduug:	D ^{IV}

Figure 4.7: Tables of sexual intermediaries in *Transvestites* (1910)⁸⁸

To be sure, this was an arbitrary number—Hirschfeld did not seriously propose that there are exactly forty-three million, forty-six thousand, seven hundred twenty-one different sexual varieties. Instead, he intended the number as a thought exercise. Hirschfeld anticipated that his readers—presumably used to thinking in terms of strict sexual binaries—might be shocked by such a large number of sexual types. “This enormous number could at first be surprising,” he wrote, “since it equals approximately a third of the total world population (estimated at 1,450 million).” In fact, however, the number was too small, because “there are hardly two humans

⁸⁸ Ibid., 287–89 [224–26].

who are exactly alike.” If one were to go further and include every—rather than just sixteen—sexual characteristic, “then the quantity of sexual variation possibilities [*Varietätsmöglichkeiten*] would soon overtake the number of people in the world.”⁸⁹ Ultimately, “it is highly unlikely that we will find two humans whose masculine and feminine characteristics exactly match in kind and number.”⁹⁰

Here then, we have reached one logical endpoint of the idea of sexual spectrality: a world where the sex of each person becomes unique. Such a system also threatens to undo sex, to make it irrelevant. Although Hirschfeld did not—at least in his writing—ever fully consider such an implication of his system, he seems to have been at least somewhat aware of the arbitrariness of sexual labels.⁹¹ When writing about crossdressers as well as about other patients (who today might be considered under the broad umbrellas of trans* and/or intersex), Hirschfeld frequently switched the gender of his pronouns as seemed most appropriate for the situation, sometimes in accordance with the patient’s gender presentation. For example, in *Homosexuality* he described the case of “a man who, until he consulted me, considered himself to be a homosexual woman.”⁹² Here, he used male pronouns—the pronouns of the patient’s supposedly ‘true’ sex (as discovered by Hirschfeld)—in introducing the patient. But he quickly switched to using female pronouns (albeit at first with scare quotes) in his description of the “female patient [*Patientin*],”

⁸⁹ Ibid., 291 [227]; translation altered slightly.

⁹⁰ Ibid., 292 [228]; translation altered slightly.

⁹¹ On Hirschfeld’s unwillingness to endorse the most radical implications of the *Zwischenstufentheorie*, see J. Edgar Bauer, “Magnus Hirschfeld’s Doctrine of Sexual Intermediaries and the Transgender Politics of (No-)Identity,” in *Past and Present of Radical Sexual Politics*, ed. Gert Hekma (Amsterdam: Mosse Foundation for the Promotion of Gay and Lesbian Studies at the University of Amsterdam, 2004), 41–55.

⁹² Hirschfeld, *Homosexualität*, 223 [271].

who rejected his suggestion that she begin living as a man.⁹³ In other words, despite being personally convinced that the patient belonged primarily to the male sex (because her sexual secretions, when examined under a microscope, contained spermatozoa), Hirschfeld was willing to respect the patient's wishes concerning what we today would call her gender identity.

Like many sexual thinkers of his time, Hirschfeld tended to regard the gonads and gametes as possessing the final 'say' over whether a person should be considered a man or a woman.⁹⁴ Particularly given Hirschfeld's insistence that sexual variations are biologically inborn, and his growing appreciation for the new science of endocrinology, it is not surprising that he should afford the gonads such authority. But this 'authority' also existed in uneasy balance with the individualizing emphasis of his theory of sexual intermediaries. Even when providing a definition of a man and a woman in *Homosexuality* (1914), Hirschfeld seemed to acknowledge that he was mostly creating a terminological fiction for the sake of ease of reference. "[O]ur point of departure," he wrote, "is the basic observation that a person who possesses male sperm and testicles is *to be considered* a male, and one who possesses eggs and ovaries a female."⁹⁵ This also displays the evolution of Hirschfeld's thinking on sexual intermediacy—it is difficult to imagine him making such a statement in *Sappho and Socrates* (1896) or in "Die objective Diagnose der Homosexualität" (1899).

After 1910, Hirschfeld's theory of sexual intermediaries underwent little change. When he published *Homosexuality* four years later, he again gave the theory its own chapter, with expanded analysis, but he drew large portions of the text from the corresponding chapter in

⁹³ *Ibid.*, 225 [274].

⁹⁴ See Alice Domurat Dreger, "Hermaphrodites in Love: The Truth of the Gonads," in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1996), 46–66.

⁹⁵ Hirschfeld, *Homosexualität*, 125 [165]; translation altered slightly; my emphasis.

Transvestites.⁹⁶ Later works similarly presented sexual variation as part of a four-fold system, with even more emphasis on the infinite variety of sexual configurations.⁹⁷ In general, Hirschfeld's career shows a pattern of continually expanding the domain of sexual variation. From the six sexual orientations of *Sappho and Socrates* to the infinity of conceivable sexual types in *Transvestites* and later works, Hirschfeld displayed a consistent willingness to rework his categories so as to recognize new variations, new intermediaries, new sexual ways of being. The categorizing aim of the *Zwischenstufentheorie* is never absent from Hirschfeld's work, and it arguably led him to some aspects of his theory that may appear problematic from a present-day perspective—for example, his belief that certain mental characteristics (such as assertiveness or docility) can be objectively described as male or female.⁹⁸ Nevertheless, it is generally the case that when Hirschfeld's categorizing aim came into conflict with his individualizing aim, the individualizing aim won out. Although Hirschfeld's system never fully escaped the idea of a sexual binary, it represents the absolute limit to which such a binary may be stretched.

In *Transvestites*, Hirschfeld began the chapter where he first explicitly refers to the *Zwischenstufentheorie* with an immediate disclaimer: "First, let us stress that the *doctrine* [Lehre] of sexual intermediaries has nothing to do with a theory [Theorie], but rather only with a *principle of division*."⁹⁹ Given his continual revisions and incorporations of new data into the theory (or 'theory'), Hirschfeld was probably right to downplay the significance of his

⁹⁶ Compare *Die Transvestiten*, 275–304 [215–36] with Hirschfeld, *Homosexualität*, 348–95 [407–30].

⁹⁷ Hirschfeld, *Sexualpathologie*; Hirschfeld, *Geschlechtskunde*.

⁹⁸ I will discuss this aspect of Hirschfeld's thinking below.

⁹⁹ Hirschfeld, *Die Transvestiten*, 275 [215]; "Zunächst ist zu betonen, dass es sich bei *der Lehre von den sexuellen Zwischenstufen* zunächst garnicht [sic] um eine Theorie, sondern nur um ein *Einteilungsprinzip* handelt."

wording—in scientific contexts, the word ‘theory’ implies a systematicity and a solidity that Hirschfeld’s ideas never achieved.¹⁰⁰ At the same time, it seems to me that it is not quite right to regard the *Zwischenstufentheorie* as a mere “principal of division.” I would argue, rather, that the ‘theory’ functioned for Hirschfeld as a heuristic, or as a way of seeing and making sense of the world. Even before its proper formulation, the *Zwischenstufentheorie* operated as an impulse in Hirschfeld’s scientific work toward the simultaneous categorization and individualization of the vast number of people regarded (by him) as sexual intermediaries, a number that eventually grew to encompass every human who has ever lived. In this regard, it is significant that Hirschfeld’s first complete account of his theory of sexual intermediaries came in a work that did not study homosexuality. While he had long used the idea of sexual intermediacy to defend the naturalness of homosexuality, the greater applicability of the theory becomes obvious in *Transvestites*. Prior to his study of crossdressers, Hirschfeld had assumed transvestism to be coterminous with homosexuality; but in attempting to understand crossdressers through the individualizing light of his ‘theory’ of sexual intermediacy—that is, of his infinite sexual spectrum—Hirschfeld was able to come to some understanding of crossdressers’ lived experience. The result of this application of the *Zwischenstufentheorie* was something that many women and sexual minorities still fight for today—namely, to be believed.

From Scientific Variation to Political Liberation

As we have seen, from his earliest publications onward, Hirschfeld argued that the etiology of homosexuality, as well as of other sexual variations, was entirely biological in character. His

¹⁰⁰ This impulse can also be seen in the title of Hirschfeld’s article on the theory, published the same year as *Transvestites*: Hirschfeld, “Die Zwischenstufen-‘Theorie.’ ” (Note Hirschfeld’s scare quotes around “Theorie.”)

biological essentialism was wholly intertwined with his ‘theory’ of sexual intermediaries.

Indeed, one of Hirschfeld’s most full-throated endorsements of the biological character of sexual intermediacy can be found in the concluding sentence of an article where he specifically sought to lay out the *Zwischenstufentheorie*:

*the sexual character as such is inborn in physical and mental relation, depending on the inherited mixture of male and female substance, independently of external factors; it is pre-formed in the embryo [Anlage] and slumbers there long before it awakens, penetrates consciousness, and unfolds itself; it [the sex character] is probably subject to temporal, and in particular periodic, fluctuations; however, it develops consistently, increases gradually, maintains itself at a certain level, and then returns, but in all essential matters it retains the same characteristic shape throughout the entire course of life.*¹⁰¹

Hirschfeld, as well as many other gay rights campaigners in Wilhelmine and Weimar Germany, believed that the best argument for the repeal of paragraph 175 lay in advancing an understanding of homosexuality as an inborn and unalterable result of individual biology. The biological argument for homosexual liberation, of which Hirschfeld was undoubtedly the most prominent proponent, found acceptance among a wide swath of German thinkers, from such prominent intellectuals as Thomas Mann and Albert Einstein, to Communist Party politicians in the Reichstag, to at least one police official, who, in a report, praised the Institute's advocacy of the “not uncommon opinion that homosexuality is not a vice, but rather an inborn predisposition.”¹⁰² As the police official’s comment suggests, the primary thrust of the bio-determinist argument was its proclamation that homosexuality is not a choice, but rather a

¹⁰¹ Ibid., 135–36; “dass... *die sexuelle Eigenart als solche in körperlicher und geistiger Beziehung angeboren ist, abhängig von der ererbten Mischung männlicher und weiblicher Substanz, unabhängig von aussen; sie ist in der Anlage präformiert und schlummert in ihr lange, bevor sie erwacht, ins Bewusstsein dringt und sich entfaltet; sie unterliegt wohl zeitlichen, namentlich auch periodischen Schwankungen, entwickelt sich jedoch konsequent, nimmt allmählich zu, erhält sich auf einer gewissen Höhe, geht dann wieder zurück, bewahrt aber in allem Wesentlichen während der ganzen Lebensdauer dasselbe charakteristische Gepräge.*”

¹⁰² GStAPK I. HA Rep. 76 VIII B Nr. 2076, 2-3, quoted in Marhoefer, *Sex and the Weimar Republic*, 15.

biological trait.¹⁰³ If homosexuality is not a choice, the argument went, then the state has no business legislating against it. Moreover, this argument could be applied to any number of other persons who could be categorized as sexual intermediaries under the *Zwischenstufentheorie*. For Hirschfeld, the best strategy for normalizing non-normative sexual variations was to publish and publicize research demonstrating their biological innateness.

* * *

Hirschfeld's fusion of science and politics can be seen even in his earliest sexological work. Indeed, his impetus for writing *Sappho and Socrates* (1896)—the suicide of one of his patients, who requested that Hirschfeld educate the public about the naturalness of homosexuality—reveals a combined motivation of this sort. *Sappho*, which opens with a quotation attributed to Friedrich Nietzsche—"What is natural cannot be immoral"—openly promoted the repeal of the paragraph 175 (the German anti-sodomy law), which it called "a black stain on the pride of German justice."¹⁰⁴ In Hirschfeld's view, the law was founded on an "unjust reckoning developed over millennia" that judged consensual acts "not only as vices, but also as crimes."¹⁰⁵ An even bigger problem, however, was that paragraph 175 was based on what he believed to be

¹⁰³ Hirschfeld worked throughout his career to cultivate close relationships with police departments throughout Germany, and especially in Berlin. Among his most important allies in this regard was Dr. Heinrich Kopp, who was the Berlin police commissioner in 1920. Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom*, 67. For more details on Berlin policing of homosexuals, see Beachy, *Gay Berlin*, chapter 2.

¹⁰⁴ Hirschfeld, *Sappho und Sokrates*, 1; 31; "Was natürlich, ist kann nicht unmoralisch sein"; "ein schwarzer Flecken auf dem Schild der deutschen Justitia." I have not been able to find the original source of the Nietzsche quotation; it is likely a false attribution.

¹⁰⁵ *Ibid.*, 31; "eine ungerechte Rechtsprechung"; "nicht nur als Laster, sondern als Verbrechen."

a faulty understanding of homosexuality as a choice, or at least as an acquired condition.¹⁰⁶ If that is an incorrect understanding—and Hirschfeld endeavored throughout *Sappho* to show that it is—then homosexuality would be nothing more than a harmless (although perhaps unfortunate) variation on the human sexual instinct. And since, as Hirschfeld argued, “What occurs between consenting people in a sexual relationship is their own matter, which they may deal with themselves,” then legislating against *homosexual* acts makes as little sense as legislating against *heterosexual* acts.¹⁰⁷ Accordingly, homosexuals could call for the repeal of the law “not as a favor, but as their right.”¹⁰⁸

In the conclusion of the pamphlet, Hirschfeld revisited the (allegedly) Nietzschean epigraph of the introduction, developing it further: only by following Nietzsche’s wisdom “will we become physically and mentally healthy men and women raised with the joyful energy of youth, fresh courage toward life, and marvelous naturality [*Ursprünglichkeit*].”¹⁰⁹ The stakes here are clear: for Hirschfeld and millions of other queer Germans, repeal of the law meant nothing less than the ability to live a happy, healthy life. It was not homosexuality that made gay men and lesbians unhealthy, but rather the prejudice of the law.

It is likely owing to these elements of bio-determinism that Hirschfeld’s arguments found as much purchase in wider German society as they did. Although he and his allies—as well as his enemies—in the German gay rights campaign never succeeded in overturning paragraph 175,

¹⁰⁶ Similar arguments had been made by Ulrichs; see, for example, “Critical Arrows” in *Riddle of “Man-Manly” Love*, 2:629.

¹⁰⁷ Hirschfeld, *Sappho und Sokrates*, 33–34; “Was zwischen willensfreien Menschen in geschlechtlicher Beziehung vorgeht, ist ihre eigene Sache, das mögen sie unter sich abmachen.”

¹⁰⁸ *Ibid.*, 31; “Nicht als eine Gnade, sondern als ihr gutes Recht.”

¹⁰⁹ *Ibid.*, 34–35; “Was natürlich ist, kann nicht unmoralisch sein, sagt Friedrich Nietzsche. Nur auf diesem Wege... werden wir körperlich und geistig gesunde Männer und Frauen heranziehen in froher Jugendkraft, frischem Lebensmut und herrlicher Ursprünglichkeit.”

the many petitions for repeal that the SHC presented to the Reichstag over the years contained the signatures of such luminaries as Richard von Krafft-Ebing, Thomas Mann, and Albert Einstein. The popular press was enthusiastic about Hirschfeld, and in 1906 when a case of police harassment of a crossdresser became a major story, one newspaper wrote that “there are men with the faces of women, and women with the faces of men. If necessary, police officials need to be schooled by Dr. Hirschfeld. Such mistrust—as in this case—should never be based on ignorance.”¹¹⁰ Surprisingly, this is exactly what happened—the Berlin police contacted Hirschfeld, and within three years they had decided to issue a “transvestite pass [*Transvestitenschein*]” to certain people whom medical doctors (usually meaning Hirschfeld) had declared to be in need of therapeutic crossdressing. Although crossdressing was not illegal, those who didn’t pass as the ‘correct’ gender were subject to police harassment—unless they had a pass giving them official permission. Within a few years, the *Berliner Börsen-Courier* reported that such passes were being given out with increasing frequency, and that “Such cases in which officials, on the basis of medical assessments, grant permission to men and women to wear the clothes of the opposite sex have increased significantly in recent times. The reason for this has to do with the fact that... a growing awareness of the correct scientific understanding of the phenomenon... has come about.”¹¹¹ Here we can see the immediate, if also qualified,

¹¹⁰ “Hose oder Noch: Ein Kapitel vom politzeilichen Mißtrauen,” *Die Welt am Sonntag*, January 22, 1906.

¹¹¹ “Lokales,” *Berliner Börsen-Zeitung*, no. 129 (March 18, 1913): 5; “Die Fälle, in denen die Behörden auf Grund von Gutachten Männern und Frauen die Erlaubnis zum Tragen der Kleidung des anderen Geschlechtes erteilen, haben sich in letzter Zeit erheblich gemehrt. Der Grund dieser Erscheinung liegt in der Tatsache, daß sich... eine richtige wissenschaftliche Erkenntnis... gebrochen hat.” My attention was drawn to this source, as well as the previous citation from the *Welt on Sonntag*, by Beachy, *Gay Berlin*, 172; the translations above are slight modifications of his.

emancipatory utility of Hirschfeld's *Zwischenstufentheorie* for homosexual and other gender-nonconforming individuals: it granted them a place in the natural order.¹¹²

Much of this may sound similar to today's attitudes toward homosexuality and other forms of queerness—and, indeed, there are many places in Hirschfeld's *oeuvre* where the text feels more like 2014 than 1914. But Hirschfeld was also a product of his era. His argument that homosexuality is not a choice, and therefore ought not to be legislated against, might remind us of some present-day arguments for gay rights, but other elements of his biological determinism may strike today's reader as dated or disturbing. This was the era of phrenology, of 'scientific' racialism, and of eugenics, and Hirschfeld's work intertwines with and is indebted to all those schools of thought. One of the most important early influences on Hirschfeld was the Italian criminologist and phrenologist Cesare Lombroso, whom he met at the 1894 International Medical Congress in Rome.¹¹³ According to James Steakley, "Hirschfeld was awed by Lombroso's vast collection of data on the physical and psychological traits of criminals as well as prostitutes and 'geniuses'; five years later, he would begin conducting much the same kind of research with homosexuals."¹¹⁴ Lombroso went on to publish an article in Hirschfeld's journal *Zeitschrift für Sexualwissenschaft* (Journal for sexology) in 1908.¹¹⁵ As we saw in the

¹¹² In *Transvestites*, Hirschfeld published an "expert medical opinion" that he and a colleague had written in support of a Berlin transvestite's request for official police permission to wear male clothing, and to change from a female name to a male one. There, Hirschfeld and his colleague wrote that "For Miss T., the issue of her petition is, frankly, *a question of existence* [Existenzfrage]." The police granted the petition to wear male clothes, although they did not allow the name change. Hirschfeld, *Die Transvestiten*, 197 [154].

¹¹³ Wolff, *Magnus Hirschfeld*, 30–31.

¹¹⁴ Steakley, "Per scientiam," 138.

¹¹⁵ Cesare Lombroso, "Liebe, Selbstmord und Verbrechen," *Zeitschrift für Sexualwissenschaft* 1, no. 7 (July 1908). The *Zeitschrift* was a second sexological journal edited by Hirschfeld, and published with the support of the SHC. The journal survived for only a year before being "subsumed into the competing publication... *Sexual-Probleme* (Sexual problems)." This journal

previous chapter, Hirschfeld was also a major supporter of Eugen Steinach's proposed endocrinological 'cure' for homosexuality, which involved removing the testicles of gay men and replacing them with 'healthy' transplants from heterosexuals.¹¹⁶ In the preface to the second edition of *Homosexuality* (published 1920), Hirschfeld wrote that Steinach's work constitutes "the most significant confirmation of our intersexual conception of homosexuality."¹¹⁷

Unsurprisingly, within a few years the Steinach 'cure' was exposed as ineffective, but Hirschfeld supported it far longer than most, because of his hope that it would provide the final proof necessary for his biological theory of sexual inversion.

Although Hirschfeld consistently argued that homosexuals and other sexual variants are not themselves degenerate—in the eugenical sense of the word—his response to the degeneration theory of homosexuality wasn't very far removed from it.¹¹⁸ Instead of declaring homosexuals

should be distinguished from another journal of the same title, which began publication after 1913. Hirschfeld was not an editor of that journal, although he was a co-founder of the association that published it, the *Ärztliche Gesellschaft für Sexualwissenschaft* (Medical society for sexology). Dose, *Magnus Hirschfeld*, 49–50.

¹¹⁶ Eugen Steinach and Robert Lichtenstern, "Umstimmung der Homosexualität durch Austausch der Pubertätsdrüsen," *Münchener Medizinische Wochenschrift* 65, no. 6 (February 5, 1918): 145–48. Hirschfeld's support for Steinach can be seen, for example, in Magnus Hirschfeld, *Künstliche Verjüngung. Künstliche Geschlechtsumwandlung. Die Entdeckungen Prof. Steinachs und ihre Bedeutung* (Berlin: Johndorff & Co., 1920). I discuss this subject in chapter 3 of this dissertation.

¹¹⁷ Hirschfeld, *Homosexualität* (2. Aufl., 1920), xiv; "die bedeutsamste Bestätigung unserer intersexuellen Auffassung der Homosexualität."

¹¹⁸ Hirschfeld's opposition to the degeneration theory of homosexuality can be seen as early as *Sappho and Socrates*: "we must not from the outset regard the inverted drive as a sign of degeneration, just as we do not do so with a harelip" ("so dürfen wir doch nicht von vornherein den verkehrten Trieb als Zeichen der Degeneration auffassen, so wenig wir dies bei einer Hasenscharte thun"). Hirschfeld, *Sappho und Sokrates*, 22. He also published, in the *Jahrbuch*, Richard von Krafft-Ebing's official rejection of the degeneration theory of homosexuality, a fact that he frequently bragged about in later publications (see, for example, Hirschfeld, *Homosexualität*, 380 [440]). Richard von Krafft-Ebing, "Neue Studien auf dem Gebiete der Homosexualität," *Jahrbuch für sexuelle Zwischenstufen* 3 (1901): 1–36. For more on the theory of degeneration in the context of early-twentieth-century German political history, see Laurie

themselves degenerate, he argued that they provide a way for Nature to halt degeneration in bloodlines that have come dangerously close to degenerating. In *Homosexuality*, he adopted the theory of the Dutch sexologist Lucien S. A. M. von Römer that (in Hirschfeld's paraphrase) often "a homosexual child will be born" to parents who are either degenerative or near-degenerative, and that "Through these individuals, for the most part in and of themselves perfectly healthy... the line otherwise leading to degeneration will be somewhat diverted, while in the healthy generation of their normal siblings the line overcomes degeneration by means of this release or discharge, and returns to full power."¹¹⁹ Rather than a theory of homosexual degeneration, then, von Römer provided a theory of homosexual regeneration (see fig. 4.8). Hirschfeld enthusiastically affirmed von Römer's ideas (in general, if not in the specifics): "Again and again, even I am compelled to believe... that the nature of homosexuals serves as a preventative means against degeneration." As evidence, he noted that "if children are born to homosexuals... many times these children bear the stamp of intellectual inferiority, unless a relative balance is created by an especially healthy partner."¹²⁰ In other words, Hirschfeld viewed homosexuality as something akin to a genetic failsafe—when the risk of future degeneracy became too high, then homosexuality developed to prevent it. He even applied this logic to himself, suggesting that his own "limited reproductive capacity" perhaps stemmed from the fact

Marhoefer, "Degeneration, Sexual Freedom, and the Politics of the Weimar Republic, 1918–1933," *German Studies Review* 34, no. 3 (2011): 529–49.

¹¹⁹ Hirschfeld, *Homosexualität*, 390 [450]. Von Römer was a frequent contributor to the *Jahrbuch* and a member of the SHC. David Higgs, *Queer Sites: Gay Urban Histories Since 1600* (Routledge, 2002), 74–75. His first published his theory of homosexual regeneration in the *Jahrbuch*: Lucien S. A. M. von Römer, "Die erbliche Belastung des Zentralnervensystems bei Uraniern, geistig gesunden Menschen und Geisteskranken," *Jahrbuch für sexuelle Zwischenstufen* 7 (1905): 67–84.

¹²⁰ Hirschfeld, *Homosexualität*, 391 [451].

that his paternal grandfather and maternal great-grandmother were siblings (meaning that his parents were first cousins once removed).¹²¹

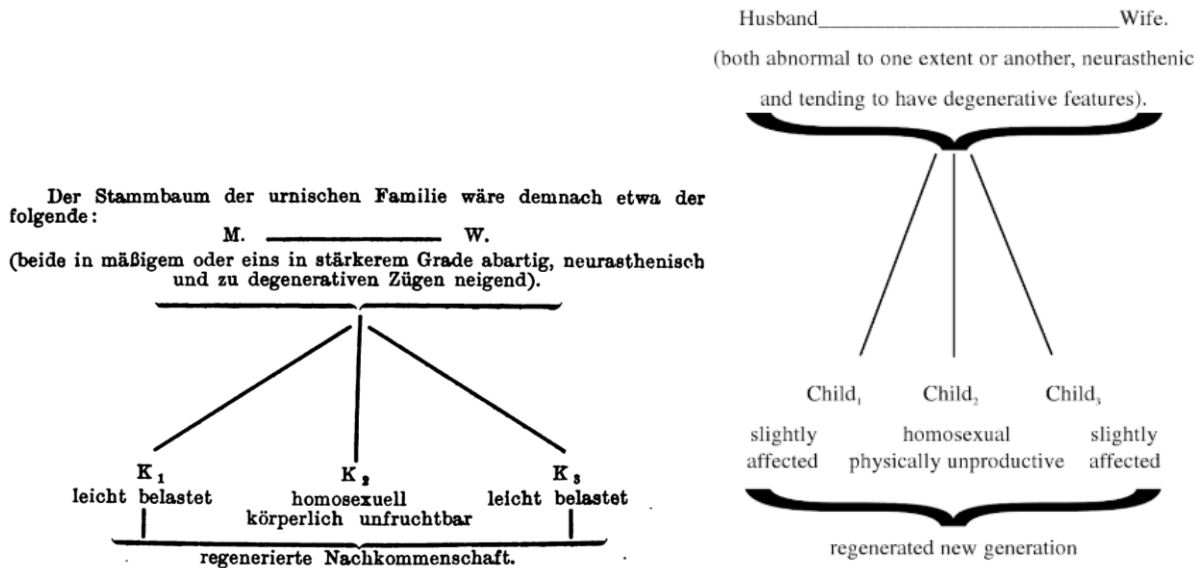


Figure 4.8: Hirschfeld's diagrammatic depiction of von Römer's homosexual regeneration theory, as presented in *Homosexualität* (1914), and Lombardi-Nash's recreation of the diagram in his translation of Hirschfeld's book.¹²²

Hirschfeld's endorsement of von Römer's regeneration hypothesis may seem curious today, but it makes sense in context. Degeneration theory (in the general sense, rather than the specifically homosexual sense) enjoyed broad scientific respectability, among both political progressives and conservatives in late Wilhelmine and Weimar Germany.¹²³ Evidence of the pervasiveness of concern about degeneration as a cause of sexual variation can be seen in the case studies that Hirschfeld published in *Transvestites*. In ten out of the twelve cases personally examined by Hirschfeld, the second sentence of the report informs the reader whether there is any hereditary history of degeneration.¹²⁴ Even if Hirschfeld had wanted to disprove the theory

¹²¹ Hirschfeld, *Von eins bis jetzt*, 158, quoted in Steakley, "Per scientiam," 146.

¹²² Hirschfeld, *Homosexualität*, 391 [451].

¹²³ Marhoefer, *Sex and the Weimar Republic*, 95; 137–38.

¹²⁴ The book contains seventeen total case studies, of which five were only known to Hirschfeld to correspondence. None of the reports on these correspondence cases contain information about

of degeneration in general—and I see no evidence to suggest that was the case, particularly given his enthusiasm for so-called positive eugenics—he would hardly have been in a sufficiently well-placed academic position to do so.¹²⁵ His authority was limited to the science of homosexuality and other sexual variations, and so it is not surprising that he limited his claims concerning degeneration to that sphere. Hirschfeld’s endorsement of von Römer’s theory also constituted an impressive bit of political *ju-jitsu*: by endorsing the idea of *regeneration*, Hirschfeld disarmed a major source of the idea that homosexuality was unnatural, while simultaneously using the general respectability of the idea of *degeneration* to establish homosexuals as defenders of society’s eugenic health.¹²⁶

Hirschfeld’s support for regeneration is best read in tandem with his general argument about the naturalness of homosexuality. He believed that homosexuality is a normal variation of humanity within the grand scheme of Nature. However, the apparent uselessness of homosexuality, by Darwinian (or pseudo-Darwinian) standards, existed as a stumbling block for this belief. Why would Nature create something that couldn’t reproduce? In Hirschfeld’s view, the main reason why homosexuality has “appeared so odd and sinister to thinking people”—

degeneration in their second sentences, perhaps because Hirschfeld did not have sufficient information on the subject.

¹²⁵ So-called ‘positive’ eugenics attempt to improve the genetic stock through encouraging the ‘correct’ people to breed and through discouraging the ‘incorrect’ people from breeding. It is distinguished from ‘negative’ eugenics, which endorses non-voluntary measures including sterilization and euthanasia. Although Hirschfeld did not support the use of sterilization procedures, he regularly encouraged people with significant sexual variations (including homosexuality) not to marry and have children, because such children were at a higher risk for degenerative conditions. See, for example, Hirschfeld, *Die Transvestiten*, 302–4 [235–36]. On the necessity of addressing Hirschfeld’s support for eugenics, see Leng, “Magnus Hirschfeld’s Meanings,” 112–15.

¹²⁶ On this point, see also chapter 4 of Hirschfeld’s earlier work, *Der urtische Mensch*, which is titled “Die Naturnotwendigkeit der Homosexualität” (The natural necessity of homosexuality) (125–38).

indeed, the reason why it “had to appear so”—could be “found in the human need for causality and utility.”¹²⁷ Once people began, at some historical point, to see “procreation [*Zeugung*]” as “not only the natural goal [*Zweck*] but also the natural *cause* [*Ursache*] of love,” then “they must have assumed that people, who turn for love to persons with whom a fulfillment of this goal of Nature [*Naturzweck*] lay outside the realm of possibility... behaved ‘against Nature [*widernatürlich*].’ ”¹²⁸ However, “As soon as people realize that reproduction [*Fortpflanzung*] is not the exclusive goal [*Zweck*] of love, the phenomenon of homosexuality, so enigmatic under this [natalistic] assumption, loses much of its puzzling nature.”¹²⁹ In other words, Hirschfeld understood the primary source of animus against homosexuals to be their apparent inability to fulfill the purposes of Nature. Von Römer’s regeneration theory gave homosexuals such a purpose, and thus provided an additional reason for viewing them as natural.

Tactical Disagreements

Although Hirschfeld’s biological arguments enjoyed significant respect, they also generated controversy, even among his fellow gay rights activists. In 1906 the entomologist Benedict Friedlaender, a prominent member of (and major financial contributor to) the SHC, founded a

¹²⁷ Hirschfeld, *Homosexualität*, 308 [365].

¹²⁸ *Ibid.*, 309 [366]; translation altered; “[M]an sah in der Zeugung nicht allein den natürlichen Zweck, sondern auch die natürliche *Ursache* der Liebe. ...dann mußte man allerdings von Menschen, die sich in Liebe solchen Personen zuwandten, mit denen eine Erfüllung dieses Naturzwecks außer dem Bereich der Möglichkeit lag, annehmen, daß sie wider die Natur, ‘widernatürlich’ handelten.” Frustratingly, Hirschfeld seems to drop the distinction that he makes between *Zweck* and *Ursache* almost immediately. (As Vern Bullough notes in his introduction to Lombardi-Nash’s translation of *Homosexuality*, Hirschfeld “might be called a sloppy writer.” *Homosexuality*, 12.) However, I believe that Hirschfeld uses *Zweck* in its second appearance in this quotation (as part of *Naturzweck*), as well as in the subsequent quotation (cited in note 129), in the sense implied by *Ursache*.

¹²⁹ *Ibid.*, 312 [369].

rival organization, the Secession of the Scientific-Humanitarian Committee (Sezession des Wissenschaftlich-humanitären Komitees).¹³⁰ Friedlaender and the others in the Secession left the organization because of the insistence of Hirschfeld and other members of the SHC on regarding male homosexuality as a form of feminization. In a memo announcing the creation of the Secession, the author (likely Friedlaender) proclaimed that “In the hindsight of theory, the SHC stands entirely upon the Ulrichsian Urning-hypothesis, which tries to explain the love of a man toward the same sex as a symptom of inner or outer femininity.”¹³¹ In contrast, Friedlaender understood male same-sex desire in a neo-Hellenic manner as the apotheosis of masculinity, a position he articulated at length in his many books published in the 1910s.¹³² For him, as well as for several other ‘masculinist’ homosexual thinkers, Hirschfeld’s position was a shameful slandering of the most virile members of society.¹³³ Friedlaender’s organization folded two years

¹³⁰ The Secession was later, briefly, known as the League for Manly Culture (Bund für männliche Kultur), before it collapsed following Friedlaender’s 1908 suicide.

¹³¹ “Sezession des Wissenschaftlich-humanitären Komitees,” MS X, p. 40, KI; “In theoretischer Hinsicht steht das W.-h. K. durchaus auf dem Boden der Ulrichs’schen Urningshypothese, die Liebe des Mannes zum eigenen Geschlecht als ein Symptom innerlicher oder äußerlicher Weiblichkeit zu erklären sucht.”

¹³² Friedlaender, *Die Renaissance des Eros Uranios*; Benedict Friedlaender, *Männliche und weibliche Kultur. Eine kausalhistorische Betrachtung* (Leipzig: Deutscher-Kampf Verlag, 1906); Benedict Friedlaender, *Die Liebe Platons im Lichte der modernen Biologie. Gesammelte kleinere Schriften* (Treptow-Berlin: Bernhard Zack, 1909). See also Friedlaender’s 1907 memoir encouraging SHC members to join the Secession, which offers something of a manifesto for his masculinist position: *Denkschrift verfasst für die Freunde und Fondszeichner des Wissenschaftlich-humanitären Komitees (im Namen der Sezession des Wissenschaftlich-humanitären Komitees)* (Berlin: Privately printed, 1907). An abridgement of this memoir has been translated into English: “Memoir for the Friends and Contributors of the Scientific-Humanitarian Committee in the Name of the Secession of the Scientific-Humanitarian Committee,” trans. Hubert Kennedy, *Journal of Homosexuality* 22, no. 1–2 (1991): 71–84.

¹³³ Perhaps the most prominent masculinist voice in the German homosexual community at this time was that of Adolf Brand, a sometime-ally of Hirschfeld whose journal *Der Eigene*—the title is a reference to the work of the anarchist Max Stirner—is often regarded as the world’s first homosexual magazine. He was also the leader of the related society *Gemeinschaft der Eigenen* (Community of the Special / Self-Owned). (Friedlaender was also a member of the GdE.) For

later, following his 1908 suicide, but his challenge damaged the SHC—it contributed directly to the dissolution of the Munich chapter of the organization, whose members couldn't decide which side of the split to support.¹³⁴ Robert Beachy speculates that the split may also have led to dwindling activity among several other non-Berlin chapters of the SHC.¹³⁵

Friedlaender's masculinist perspective took an unsurprisingly dim view of women. In *Männliche und weibliche Kultur* (1906) he denounced "the foolish modern assertion about the... 'equal worth' of the sexes," and declared that modern society had "covered a considerable distance on the path to gynocracy."¹³⁶ Here too we find a major difference between Friedlaender and Hirschfeld. In general, Hirschfeld was an ally of the women's movement, and particularly of

more on Brand and the GdE, see Oosterhuis, *Homosexuality and Male Bonding in Pre-Nazi Germany*; Beachy, *Gay Berlin*, chapter 6; and John Herbert Roper Jr., "The *Gemeinschaft der Eigenen* and the Cultural Politics of Homoeroticism in Germany, 1896–1933" (PhD diss., University of Pennsylvania, 2014). On the tradition of Hirschfeld's medical model of homosexuality vs. that of Brand and Friedlaender's masculinist friendship model of homosexuality, see Harry Oosterhuis, "Homosexual Emancipation in Germany Before 1933: Two Traditions," *Journal of Homosexuality* 22, no. 1–2 (1991): 1–28 (this article can also be found in Oosterhuis's edited volume, cited above); and Max Kramer, "From Georg Simmel to Stefan George: Sexology, Male Bonding, and Homosexuality," *German Studies Review* 41, no. 2 (May 2018): 275–95. See also note 47, above.

¹³⁴ "Denkschrift," MS X, p. 40, KI; Minutes of meetings of the Munich chapter of the Scientific-Humanitarian Committee, MS VII, p. 24, KI.

¹³⁵ Beachy, *Gay Berlin*, 117.

¹³⁶ Benedict Friedlaender, "Male and Female Culture: A Causal-Historical View," in *Homosexuality and Male Bonding in Pre-Nazi Germany*, ed. Harry Oosterhuis, trans. Hubert Kennedy (New York: Harrington Park, 1991), 207–17, at 209; translation slightly altered. In this regard Friedlaender was highly influenced by the philosopher Arthur Schopenhauer. He served as the editor, and wrote a foreword, for a reprint of Schopenhauer's essay "Über die Weiber" ("On Women"), which was published as the first volume of the "Popular [*Gemeinverständlich*] Writings on the Fostering of Manly Culture" series. Ad for "Über die Weiber," MS X, p. 40, KI. The volume was published in 1908 by Bernhard Zack.

its left-wing elements.¹³⁷ His most enduring relationship here was with Helene Stöcker, leader of the League for the Protection of Mothers and Sexual Reform (Bund für Mutterschutz und Sexualreform), which she cofounded with Hirschfeld in 1905.¹³⁸ Stöcker also served as a chairperson of the SHC, one of only four women to do so.¹³⁹ Stöcker's organization allied itself with the SHC on most political matters, and like the SHC, it was subject to heavy police observation by the Wilhelmine and Weimar authorities.¹⁴⁰ Hirschfeld and the SHC also supported the early work of Anna Rüling, who, like Stöcker, served for at least some time as a chairperson of the organization.¹⁴¹

Hirschfeld's support of the women's movement makes sense within the context of his scientific ideas. In general, he was one of the few sexologists studying homosexuality—especially among non-psychologists—to devote a significant amount of his scholarly attention to women.¹⁴² Hirschfeld's theory of sexual intermediaries held that all variations of sexual biology were natural and deserving of respect, and it thus encouraged a politics of equality. This ideal can be seen clearly in a speech that Hirschfeld gave in front of the Reichstag on November 10, 1918, the day after the abdication of Kaiser Wilhelm II and the declaration of a German republic. There Hirschfeld proclaimed that the new government would allow the possibility of socialism,

¹³⁷ On Hirschfeld's support for the women's movement, see in particular Wolff, *Magnus Hirschfeld*, chapter 5; and Kirsten Leng, *Sexual Politics and Feminist Science: Women Sexologists in Germany, 1900–1933* (Ithaca: Cornell University Press, 2018).

¹³⁸ Beachy, *Gay Berlin*, 117.

¹³⁹ Leng, *Sexual Politics*, 328.

¹⁴⁰ "Berichte und Protokolle über Vorträge von Mitgliedern des unter der Leitung von Frau Dr. Helene Stöcker stehenden Deutschen Bundes für Mutterschutz," A Pr. Br. Rep. 030-05 Nr. 1648, Landesarchiv Berlin, Germany.

¹⁴¹ For more on Rüling, see chapter 1 of this dissertation.

¹⁴² Wolff, *Magnus Hirschfeld*, 37.

which for him meant “The union of all citizens of Germany, mutual care for one another, the evolution of society into one organism, equality for all, everybody for all and all for everybody.”¹⁴³ The new provisional government ‘granted’ the right to vote to women two days later, and Hirschfeld (together with his sister Franziska Mann) swiftly issued a pamphlet declaring the new female franchise as “a hope” that “came out of gray mists.”¹⁴⁴ In the light of the individualizing aim of the *Zwischenstufentheorie*, women existed as creatures with just as much possibility for greatness as men.

However, Hirschfeld’s emphasis on biological essentialism also affected his views on women. Although he can easily be considered a feminist by the standards of the time, he nevertheless believed that women are, in general, intellectually inferior and emotionally superior to men. In his *Zwischenstufentheorie*, emotional and mental (*seelisch*) characteristics are one of the axes of sexual variation, and he categorized various attributes of intelligence and emotionality as biologically masculine or feminine. In *Transvestiten*, he wrote that “In accordance with the build of her body... the [absolute] woman is more receptive, impressionable, sensitive, emotional, and more direct than the man, while she is less concerned with the strongly abstract, the racking of one’s brains, or even the purely creative and active side of the human psyche.”¹⁴⁵ (The absolute man, in contrast, is a “master [*Beherrscher*] of logic.”¹⁴⁶) Although he noted that these attributes were “valid only for the ‘absolute’ womanly type,” Hirschfeld doubted that women’s “abilities are sufficient to perform the highest

¹⁴³ Quoted in *ibid.*, 168.

¹⁴⁴ Magnus Hirschfeld and Franziska Mann, *Was jede Frau vom Wahlrecht wissen muß!* (Berlin: Alfred Pulvermacher, 1918), 7. The German sentence can be found below, in note 148.

¹⁴⁵ Hirschfeld, *Die Transvestiten*, 277 [218–19].

¹⁴⁶ *Ibid.*, 290 [226].

accomplishments of culture, the creation of exceptional masterpieces in technology, art, and science.”¹⁴⁷ Even the pamphlet that he later wrote with his sister on women’s suffrage concerns itself mostly with paternalistically educating women about how to vote *properly*—the new “hope” could easily be destroyed through “wrong, unrestrained action” (i.e., voting without thinking).¹⁴⁸

However, because Hirschfeld considered such attributes to be sexually variable characteristics, he held that they are only generally, rather than absolutely, associated with people who would be typically be called women.¹⁴⁹ In Hirschfeld’s system it is possible for any sexual characteristic to vary independently of the others, and so it is perfectly reasonable to imagine the existence of a person with a completely feminine body who nevertheless also possesses high intelligence. Indeed, the existence of such people should be assumed. But it is reflective of a generally patriarchal attitude that in the *Zwischenstufentheorie* an intelligent woman must, by definition, have a masculine mind, and thus be considered as a sexual intermediary of the fourth category.¹⁵⁰ This meant that, for Hirschfeld, intelligent women are sexually intermediate in nearly the same way as are transvestites (who also belong to the fourth category). Hirschfeld was an ally of the women’s movement, and his biological theory made

¹⁴⁷ *Ibid.*, 277 [218–19].

¹⁴⁸ Hirschfeld and Mann, *Was jede Frau vom Wahlrecht wissen muß!*, 7; “Aus grauen Nebeln heraus kam uns eine Hoffnung—falsches, ungezügelt Vorgehen kann sie vernichten.” This is the complete sentence cited above (note 144).

¹⁴⁹ By this point (1910), Hirschfeld defined the term ‘woman’ for technical usage simply as a person who possessed ovaries.

¹⁵⁰ However, it should be noted that many of the feminists with whom Hirschfeld was closely allied (such as Stöcker and Rüling) shared this belief in the general masculinity of intelligence.

space for the existence of incredible women; but it was also because of his biological approach that he considered them to be generally inferior to men, at least intellectually.¹⁵¹

In the late 1920s Hirschfeld's biological approach again encountered sustained opposition within the SHC. In 1929, the SHC found itself split over the question of whether to support a bill that would have replaced paragraph 175 with a new law that would have made same-sex intercourse between consenting males legal; however, the law would also have raised the age of consent for male-male intercourse to twenty-one.¹⁵² Moreover, the new law would have punished male homosexual prostitution and homosexual relations with underage men much more severely than before. (Moreover, such relations would be prosecuted according to the new, specifically homosexual age of consent that the new law would have specified.) The SHC was sharply divided: was it worth achieving liberation for the majority of Germany's gay men, especially the more respectable (and powerful) middle-class ones, at the expense of criminalizing some in a new way? Although Hirschfeld opposed outlawing male prostitution, the evidence indicates that he likely would have used his position as the head of the SHC to support the bill. However, he resigned from the Committee in 1929, apparently forced out by a younger and more radical cadre who regarded the new bill as only "an intensification of the old paragraph 175."¹⁵³

¹⁵¹ As with many other thinkers of his time, Hirschfeld believed that women are superior to men in certain other respects, particularly those relating to raising and nurturing children. Of course, it is usually the case in such theories that the things that women are good at never turn out to be those that would allow them to live an independent existence. Examples of similar ideas can be found throughout Stienach's work, for example. Eugen Steinach, *Sex and Life: Forty Years of Biological and Medical Experiments* (New York: The Viking Press, 1940), 39.

¹⁵² At that time, the age of consent for women was sixteen; I have not been able to determine the age of consent for men (it may have also been sixteen). Marhoefer, *Sex and the Weimar Republic*, 240n181. Sexual activity between women had no special legal status in Germany and thus was legal (assuming there were no additional laws broken).

¹⁵³ Vorstand des W.H.K., "Der 175 nicht gefallen!," *Mitteilungen des Wissenschaftlich-humanitären Komitees* 26 (December 1929): 207–8, at 207; "eine Verschärfung des alten §175." For more information on this debate within the SHC, see Marhoefer, "Degeneration," 538–43;

The disagreement in the SHC was not merely about the permissibility of compromise. It was also rooted in disagreements about the political utility of bio-determinist understandings of homosexuality. The lawyer Arthur Kronfeld argued in the first SHC newsletter following Hirschfeld's resignation that whether homosexuality is biological in character is "fully irrelevant" to the question of decriminalization. He continued: "One... who assumes that proof of a [homosexual] constitution constitutes... the precondition of decriminalizing the homosexual persuasion [*Bestätigung*] commits a logical-methodological error; moreover, in the absence of this proof (in which case the lawyer decides on a *medical* issue), he leaves open the possibility of demanding the punishment of homosexual acts."¹⁵⁴ This was clearly intended as a rebuke of Hirschfeld specifically, as well as of medical activism for homosexual emancipation generally. Kronfeld held that Hirschfeld's argument lacked sufficient proof, and in the absence of that proof, was politically vulnerable. Instead of the doctors, it should be lawyers taking the lead, relying on the argument that "the decriminalization of homosexual behavior follows fundamentally from the consideration of legal theory"—that is, from the principles of individual rights and limited government.¹⁵⁵

and Marhoefer, *Sex and the Weimar Republic*, chapter 5; many of the details presented here stem from her accounts.

¹⁵⁴ Arthur Kronfeld, "Zur 'konstitutionellen Bedingtheit' der Homosexualität," *Mitteilungen des Wissenschaftlich-humanitären Komitees* 26 (December 1929): 225–27, at 226; "völlig irrelevant"; "Wer... den Nachweis einer [homosexueller] Konstitution... zur Voraussetzung der Straflosigkeit homosexueller Bestätigung macht, begeht erstens einen logisch-methodologischen Irrtum, und zweitens läßt er die Möglichkeit offen, bei Nichtgelingen dieses Nachweises (wobei also der Jurist über eine medizinische Problemstellung entscheidet) die Strafwürdigkeit homosexueller Handlungen zu fordern."

¹⁵⁵ *Ibid.*, 226; "Die Nichtstrafwürdigkeit homosexueller Handlungen folgt aber grundsätzlich aus rechtstheoretischen Erwägungen." My attention was brought to this source thanks to Marhoefer, *Sex and the Weimar Republic*, 120.

Indeed, it is debatable how successful Hirschfeld's biological arguments for homosexual liberation actually turned out to be. In an insightful analysis of the judiciary committee vote of 1929 to repeal and replace paragraph 175, Laurie Marhoefer notes that only the Communist Party members of the Reichstag judiciary subcommittee framed their votes in terms of biology. They argued that while homosexuality was abnormal, it was not unnatural, and that it should therefore be decriminalized.¹⁵⁶ Most of the rest of the members of the judiciary committee who voted to repeal and replace Paragraph 175 did so because of their fears that male prostitutes would seduce underage clients into homosexuality. Such a fear assumed that homosexuality can be acquired, particularly for boys and young men, and many of the judiciary committee members explicitly disavowed the idea that homosexuality is an inborn trait. Marhoefer argues that the fact that many of those who voted for the abolition of paragraph 175 did so for non-Hirschfeldian reasons "demonstrate[s] how far out on the intellectual fringes was Hirschfeld's model of homosexuality as inborn, immutable, and not pathological."¹⁵⁷ However, I hold that we should not regard these votes as a complete dismissal of Hirschfeld's biological approach. After all, if Hirschfeld were *really* out on the fringes, why would so many of the Reichstag judiciary committee members have specifically stated in their speeches that they disagreed with the biological approach generally and with Hirschfeld's version of it specifically? I contend, on the contrary, that their behavior shows that Hirschfeld's bio-determinist narrative possessed a level of social plausibility that required it to be at least considered as an explanation: ignoring it was not an option. And while Hirschfeld obviously would have preferred that the judiciary committee

¹⁵⁶ Marhoefer, *Sex and the Weimar Republic*, 127.

¹⁵⁷ *Ibid.*, 128

members accept his ideas rather than reject them, the very manner of their rejection indicates the degree to which they had become part of the mainstream.

Conclusion

In his recent book on Karl Heinrich Ulrichs, Ralph Leck argues that “a dichotomy exists in the history of natural science. The naturalness of flora and fauna is inclusive; the naturalness of human sexuality is exclusive.”¹⁵⁸ By this, Leck means that species of plants, animals, etc., have traditionally been understood in the Linnaean paradigm as self-evident: if I have discovered a new species, then that species may reasonably be assumed to exist. But human sexuality has not usually been afforded the same assumption; instead, many sexual researchers have relied upon “dualistic European morality”—even if subconsciously—when opining on the “naturalness” of an observed variation on human sexuality.¹⁵⁹ In consequence, scientific descriptions of sexual minorities have often been used to stigmatize them as unnatural. As Leck argues, “whether sexual researchers’ epistemological primacy was a dualistic metaphysical morality or a nondualistic naturalistic variety greatly determined the social meaning of their classificatory science. One’s starting point powerfully influenced civic judgments.” In this regard, he praises Ulrichs (and also Hirschfeld) for their “descriptive approach” to sexual science, which “expanded the acceptability of diverse forms of sexuality” and “constituted a radical form of inclusion, a new culture of acceptance, and an affirmation of personal freedom.”¹⁶⁰

¹⁵⁸ Leck, *Vita Sexualis*, 17.

¹⁵⁹ *Ibid.*, 16.

¹⁶⁰ *Ibid.*, 17.

My argument in this chapter has proceeded along similar lines. Thanks to the individualizing tendency of the *Zwischenstufentheorie*, Hirschfeld was able to see and to advocate for the humanity of sexual minorities. As he wrote in “Objektive Diagnose,” “Male and female Urnings exist, they are not delusions; consequently, they are worthy of recognition.”¹⁶¹ This is why I argue that the *Zwischenstufentheorie* should be understood first of all as a heuristic: it functioned as a way of seeing the world that assumed from the beginning that sexual differences exist in the ‘natural’ state of things. When his theory seemed to no longer match his observations, Hirschfeld was generally willing to change the theory to incorporate the new data.¹⁶² In practice, that meant regarding as authentic and valid the experiences of a vast number of people who tended to be marginalized, stigmatized, and disempowered by cultural and political forces that would label them ‘abnormal.’

At the same time, some aspects of Hirschfeld’s thought are deeply problematic from the standpoint of twenty-first-century progressive sex and gender politics. As Annette Timm has recently observed:

¹⁶¹ Hirschfeld, “Objektive Diagnose,” 26. The next sentence reads: “An extensive and quite careful case history will have to pay careful attention to the circumstances described, so that even the greatest skeptics and all those who hitherto followed their subjective feelings more than objective knowledge in the judgment of homosexuals will realize that homosexuality [*Uranismus*] not a crime, but a natural scientific phenomenon.” “Der Uring und die Urninde existieren, sie sind keine Wahngelüste, daher sind sie wert erkannt zu werden. Eine umfangreiche und recht sorgfältige Casuistik wird vor allem auf die geschilderten Verhältnisse ihr Augenmerk zu richten haben, damit selbst die grössten Skeptiker und alle, welche bisher in der Beurteilung der Homosexuellen mehr ihrem subjektiven Gefühl, als der objektiven Erkenntnis folgten, merken, dass der Uranismus kein Verbrechen, sondern ein naturwissenschaftliches Phänomen darstellt.”

¹⁶² One major exception to this tendency was Hirschfeld’s continued endorsement of Eugen Steinach’s research into homosexuality. For more on this matter, see chapter 3 of this dissertation, as well as Chandak Sengoopta, “Glandular Politics: Experimental Biology, Clinical Medicine, and Homosexual Emancipation in Fin-de-Siècle Central Europe,” *Isis* 89, no. 3 (1998): 445–73.

the definitions [Hirschfeld] gave this terminology, his insistence upon essentializing bodily difference, and his faith in the power of medically regulated eugenics are enough to give today's progressive supporters of sexual minorities pause. ... while [he was] not immune to the subjective wishes of his patients, Hirschfeld's term 'sexual intermediaries' could be understood as lumping together all deviations from the norm, a taxonomical practice that tended to reinforce rather than break down the bipolarity of normative masculinity and femininity.¹⁶³

These aspects of Hirschfeld's thought should not be ignored or papered over. They were not extraneous to his science or to his politics—they were fundamental to it. The theory of sexual intermediaries operated within a system where masculinity and femininity were assumed to have 'real' existence and objective definitions, even if the terms 'man' and 'woman' ceased to have any real meaning in his schema. Today, such an essentialist concept of sex and gender would be rightly unacceptable to those who fight for sexual justice. While it is true that Hirschfeld advocated for political rights for a variety of sexual minorities, including those whom we would today refer to as crossdressers and trans people, he did so because he saw no absolute difference between them—all represented varying biological types in his theory of sexual intermediaries.

Hirschfeld accomplished great things. He and his organization nearly succeeded in overturning the discriminatory German anti-sodomy law; he gave inspiration to generations of scientists and activists; and in his medical practice as in his political work he helped thousands of people to come to accept and love themselves. Perhaps the most difficult aspect of Hirschfeld's legacy is that these great accomplishments were possible *because* of the problematic aspects of his sexual thought.¹⁶⁴ Without his essentialized understanding of masculinity, femininity, and

¹⁶³ Annette F. Timm, "Introduction: Sexual Publics and Sexual Citizenship from Hirschfeld to the Present," in *Not Straight from Germany: Sexual Publics and Sexual Citizenship Since Magnus Hirschfeld*, ed. Michael Thomas Taylor, Annette F. Timm, and Rainer Herrn (Ann Arbor: University of Michigan Press, 2017), 1–8, at 2.

¹⁶⁴ On this point, Kirsten Leng notes that "revisiting Hirschfeld's life and legacy with a view to its irreducible complexity may enable scholars to fully grapple with the positive and negative legacies left by early twentieth-century sexology and sexual politics. Abandoning our

sexual difference, he would not have been able to make a cogent argument for sexual liberation. If Weininger—a man whom Hirschfeld cited frequently, and in generally positive contexts—should give us pause on account of his combination of seemingly-progressive science with reactionary politics, then Hirschfeld presents, at least in part, an instance of progressive politics combined with a partly reactionary science. In both cases, the good and the bad in their thinking (to use distinctly unhistorical terminology) are inseparable.

In the last few decades, Rosemarie Garland-Thomson and other scholars have suggested that a “strategic essentialism” may be temporarily necessary in political fights for the rights of marginalized persons.¹⁶⁵ Robert Beachy, somewhat surprisingly, uses exactly that phrase to praise Hirschfeld in his recent book.¹⁶⁶ But to call Hirschfeld a “strategic essentialist” implies that, in his heart of hearts, he was *actually* some kind of social constructionist. Such a formulation may make it easier for academics influenced by Foucauldian (or pseudo-Foucauldian) understandings of medical power to embrace Hirschfeld as a historical hero, but it is not a historically justified view.¹⁶⁷ Hirschfeld was a biological essentialist, through and

attachments to Hirschfeld as a heroic figure may allow us to reframe sexology as an agonistic field, one populated by an array of actors with varying political motivations, simultaneously capable of animating both emancipatory aspirations and anti-humanitarian, repressive racist fantasies. This more ambivalent history may ultimately prove more rewarding for present-day readers, and more politically enlightening as well.” Leng, “Magnus Hirschfeld’s Meanings,” 116. On Hirschfeld in relation to today’s identity politics, see also Bauer, “Magnus Hirschfeld’s Doctrine of Sexual Intermediaries and the Transgender Politics of (No-)Identity”.

¹⁶⁵ Rosemarie Garland-Thomson, *Extraordinary Bodies: Figuring Physical Disability in American Culture and Literature* (New York: Columbia University Press, 1997).

¹⁶⁶ Beachy, *Gay Berlin*, 186.

¹⁶⁷ On the other hand, Hirschfeld’s biological essentialism has also made it easier for researchers who incline toward a similar explanation of homosexuality—such as Simon LeVay—to embrace him in the present day. In this respect, one could reasonably regard LeVay as Hirschfeld’s greatest living disciple. See Simon LeVay, *The Sexual Brain* (Cambridge, Mass: MIT Press, 1993); Simon LeVay, *Queer Science: The Use and Abuse of Research into Homosexuality* (Cambridge, Mass: The MIT Press, 1996); and Simon LeVay, *Gay, Straight, and the Reason*

through. While certain aspects of his scientific and political ideas may remind us of more recent activism for gay and trans rights—particularly his insistence that homosexuality is not a choice, and that trans people should be allowed to live and to dress as they see fit—he also shares an intellectual lineage with a biologicistic scientific tradition that has frequently been used to control and tyrannize minorities.¹⁶⁸ At the same time, Hirschfeld’s research and activism demands a certain rethinking of assumptions held by many scholars working after Foucault. For Hirschfeld, as for Karl Heinrich Ulrichs before him, biopower was not a tool of oppression, but rather the means to enact an emancipatory agenda. *Per scientiam ad justitiam* was no idle statement, and neither was it some ineffective, quixotic ideal. For decades Hirschfeld was the face of the homosexual rights movement in Germany, and he managed to achieve that position because of the intellectual respectability afforded to him by his essentialism. For those writing LGBT history today, Hirschfeld’s story should serve as a reminder that the political implications of essentialist and constructionist understandings of homosexuality are never set in stone, but rather depend always upon the political moment in question, and upon the contemporary concepts of science, morality, and humanity that accompany them.

Why: The Science of Sexual Orientation (Oxford, New York: Oxford University Press, 2011). For a critique of LeVay’s approach, as well as biological approaches to homosexual liberation in general, see Jennifer Terry, “The Seductive Power of Science in the Making of Deviant Subjectivity,” in *Science and Homosexualities*, ed. Vernon A. Rosario (New York: Routledge, 1996), 271–95.

¹⁶⁸ Note that I am in no way claiming here that Hirschfeld helped to pave the path toward the oppression of homosexuals under the Third Reich, as some scholars have claimed in the past. (However, I do not believe that any have made this claim in recent years.) See Andreas Seeck, “Einführung,” in *Durch Wissenschaft zur Gerechtigkeit? Textsammlung zur kritischen Rezeption des Schaffens von Magnus Hirschfeld*, ed. Andreas Seeck (Münster: Lit Verlag, 2003), 7–24; and Mancini, *Magnus Hirschfeld and the Quest for Sexual Freedom*, xii–xiv.

Conclusion

Yes, you are right. We have to face the facts that, for our lifetime, Germany is no longer a country where progress in science and in civilization can be expected. Especially sexology and sexual reform we must consider a dead issue.

Harry Benjamin, letter to Magnus Hirschfeld, May 23, 1934¹

The End of Spectrality?

By the end of the Second World War, almost all the figures examined in this dissertation had died. Magnus Hirschfeld died in 1935. Rosa Mayreder died in 1938. Eugen Steinach died in 1944. Theo Sprüngli (a.k.a. Anna Rüling) held on until 1953, but it seems that by that point she had not published anything concerning spectral sex for almost half a century. (Otto Weininger, of course, exited far earlier, having committed suicide in 1903.) Other figures who did not receive major attention in this dissertation, but who might well be included in a future expansion of it, died within the same fifteen-or-so years: Edward Carpenter (1929); Havelock Ellis (1939); Helene Stöcker (1943); Johanna Elberskirchen (1943). Concurrent with the passing of these thinkers, the spectral conception of sex seemed to nearly vanish from view for the next several decades. In its place was a renewed binarism in the 1950s, enshrined by the postwar political and cultural laudations of the (white, middle class) nuclear family.

To be sure, ideas of sexual spectra did not disappear entirely.² For decades after the end of the war, Steinach's acolyte Harry Benjamin, who was also friendly with Magnus Hirschfeld and at least acquainted with Rosa Mayreder, continued to deploy a spectral conception of sex in

¹ Harry Benjamin to Magnus Hirschfeld, May 23, 1934, "Korrespondenz von Harry Benjamin," Archiv der Magnus-Hirschfeld-Gesellschaft. This letter was written in English.

² For a history that, in part, tracks the postwar life of the idea of a sexual spectrum in the US, see Joanne Meyerowitz, *How Sex Changed: A History of Transsexuality in the United States* (Cambridge, MA: Harvard University Press, 2002).

his research. In 1966 he published the work for which he is best known today, *The Transsexual Phenomenon*, the first book-length medical study of transsexuality.³ *Transsexual Phenomenon* built upon Hirschfeld's *Transvestites*; like Hirschfeld, Benjamin argued that his patients ought to be treated with respect and dignity. He advocated an affirmative therapy that included voluntary hormone therapy, sex reassignment surgery, and, above all, the idea that transsexuals ought to be free to live their lives as they saw fit. Also like Hirschfeld, Benjamin tended to rely on biological essentialism in his accounts of sexual variation, and often took a paternalistic (although also caring) attitude toward his patients.⁴ Benjamin lived until 1986, dying at the age of 101. Other prominent sexologists of the postwar period—notably John Money, Christian Hamburger, and perhaps Alfred Kinsey—also endorsed a spectral idea of sex in one form or another. Further, studies of the media portrayal of the trans woman Christine Jorgensen suggest that the American public in the 1950s and 1960s may have been somewhat more willing to consider ideas of non-binary sex than we might suspect.⁵ But in general, the idea of sex as a spectrum seems to have retreated sharply after the 1930s, coming back as a major force perhaps only in recent decades.

Why did the retreat occur? One possible answer is the rise of molecular biology in the postwar period. In the first decades of the twentieth century, endocrinology offered a chemical vision of sex rooted in hormone balances. This was an idea that was easily compatible with a spectral understanding of sex. But by the 1950s, advances in microscopic technology and technique, along with the discovery of the structure of DNA by James Watson and Francis Crick (with the help of uncredited research by Rosalind Franklin), encouraged popular and scientific

³ Harry Benjamin, *The Transsexual Phenomenon* (New York: Ace, 1966).

⁴ Meyerowitz, *How Sex Changed*, 118.

⁵ *Ibid.*, chapter 2.

understandings of the body that increasingly privileged the role of chromosomes. Where the previous emphasis on hormones in the definition of sex had implicitly supported spectrality, the new emphasis on chromosomes, with its (apparently) binary distinction between XX and XY, seemed to re-affirm older ideas of non-spectral sex. Over the next several decades, the prominence of the chromosomes in understandings of the body would increase significantly, leading to the broad acceptance of the view that the socialist Howard Kaye has dubbed “molecular man,” and that the philosophers of science Helga Nowotny and Giuseppe Testa call “the hegemony of the molecular glance.”⁶ In this new era of XX and XY, there was rather little intellectual space for a spectral conception of sex.

Another possible answer lies less in a shift from one Kuhnian scientific paradigm to another than in the active suppression of knowledge by the National Socialists.⁷ As it happened, by far the largest concentration of thinkers of sexual spectrality in both the sciences and the humanities could be found in Germany and Austria.⁸ Many of those thinkers also happened to be Jewish, or to have Jewish ancestry. When the Nazis came to power in Germany in 1933 and in Austria in 1938, they swiftly moved to shut down scientific work that implied or argued for a

⁶ Howard L. Kaye, *The Social Meaning of Modern Biology: From Social Darwinism to Sociobiology* (New Haven: Yale, 1986); Helga Nowotny and Giuseppe Testa, *Naked Genes: Reinventing the Human in the Molecular Age*, trans. Mitch Cohen (Suhrkamp, 2009; Cambridge: MIT Press, 2014), 5.

⁷ Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 4th ed. (1962; Chicago: University of Chicago Press, 2012).

⁸ Why so much of the thinking about sexual spectra occurred in German-speaking lands remains an open question. Part of the answer surely lies in the relative strength and prestige of German and Austrian academia, as well as the relatively large freedom from censorship afforded to German publishers of any work that could plausibly lay claim to having scientific or educational merit. This is in stark contrast to the situation in most other countries in Europe at the turn of the twentieth century. Under the Weimar Republic, such freedom from censorship was increased even further. See Robert Beachy, “The German Invention of Homosexuality,” *The Journal of Modern History* 82, no. 4 (December 1, 2010): 801–38.

sexual spectrum. In Hirschfeld's case, the Nazis moved with remarkable rapidity; less than forty-five days after Hitler attained dictatorial power, the SA ransacked the Institute for Sexual Science and burned its archives. Steinach's lab and papers were similarly seized after the *Anschluss* of Austria. Although neither Hirschfeld nor Steinach suffered physical harm from the Nazis, neither thinker published any significant scientific work in their remaining years of life.

Hirschfeld in particular attracted Nazi ire to a more significant degree than one might expect, even taking into account his Jewishness, his socialism, and his homosexuality.⁹ As Ralf Dose records, during the seizure of the Institute for Sexual Science, the looters not only vandalized the premises but also impaled a bust of Hirschfeld's head on a stake and paraded it around amid torches held aloft (see fig. 5.1).¹⁰ Fortunately for him, in the wake of the Nazi takeover he had decided not to return to Germany from an extended lecture tour. Even two years after his death (in 1935), Hirschfeld was singled out in the notorious Nazi art exhibition *The Eternal Jew* (*Der ewige Jude*). Hans Diebow, the author of the exhibition brochure, wrote: "Professor Magnus Hirschfeld—even his physical appearance is certainly the most repulsive of all Jewish monsters."¹¹

⁹ Although Hirschfeld never publicly disclosed his homosexuality, there were persistent rumors about his sexuality.

¹⁰ Ralf Dose, *Magnus Hirschfeld: The Origins of the Gay Liberation Movement*, trans. Edward H. Willis (2005; New York: Monthly Review Press, 2014), 104n.

¹¹ Hans Diebow, *Der ewige Jude*, Munich, 1937, quoted in *ibid.*, 13.



Figure 5.1: A bust of Magnus Hirschfeld, impaled by Nazi looters of the Institute for Sexual Science (date unclear, but probably May 10, 1933)¹²

Why did the Nazis seem to hold such particular hatred for Hirschfeld, even after his exile and death? While a proper consideration of this question is beyond the scope of this dissertation, it seems reasonable to suppose that the Nazis found something particularly objectionable about Hirschfeld's scientific theories. As Dagmar Herzog has argued, "Many Nazi 'experts' advanced a social constructionist view of sexuality that insisted that sexual identity was variable and vulnerable"; in this view, homosexuality could be spread like a disease, and Hirschfeld, the most prominent Weimar advocate for homosexual rights, would be Patient Zero.¹³ Such 'experts' wrote in specific opposition to Hirschfeld's biological theory of homosexuality. However, in at

¹² Ibid., between 64 and 65.

¹³ Dagmar Herzog, *Sex After Fascism: Memory and Morality in Twentieth-Century Germany* (Princeton: Princeton University Press, 2005), 34.

least two cases that Herzog cites, the Nazi authors seem to have conceived of homosexuality along remarkably spectral lines. One argued that “with respect to homosexuality there is no stark either-or, no incurable fateful naturalness, but rather many transitional stages and in-between forms,” while another argued that homosexuality is a “neurosis, in which the bisexuality inherent in every person has been foregrounded in an abnormal way.”¹⁴ In these authors’ views, it would seem that homosexuality (and sexuality in general) is best explained as a spectrum—however, *contra* Hirschfeld, as a social or cultural spectrum, which could be potentially mastered through a sufficient application of will, rather than as a presumably unmasterable biological spectrum. Although it is speculation on my part, I wonder whether perhaps these authors felt the need to denounce Hirschfeld not because of the *opposition* of his theory to theirs but because of an uncomfortable *closeness*.

Regardless of the reasons for the National Socialists’ animus toward Hirschfeld in particular, the fact remains that the Nazis put an end to the largest portion of research into sexual intermediacy. The party of Hitler dealt a significant blow to the idea of sexual spectrality, even while some of their sexual theorists seem to have embraced one variant of it.

Today

In recent years, the idea of a sexual spectrum—or at least the idea of sexual non-binarism—has again become a major intellectual force. Today, however, the idea tends to be less an outgrowth of scientific theories of sex than of philosophical and sociological theories of gender. This is the biggest difference between today’s theories of sexual non-binarism and those that circulated in

¹⁴ “Homosexualität—keine Erbkrankheit,” *Deutsche Sonderschule* 5 (1938), 663; Fritz Mohr, “Einige Betrachtung über Wesen, Entstehung und Behandlung der Homosexualität,” *Zentralblatt für Psychotherapy* 15 (1943), 13; both quoted in *ibid.*, 34.

the late nineteenth and early twentieth centuries. Every thinker examined in this dissertation gave (biological) sex ontological priority over gender and sexuality. Some (such as Steinach) affirmed this priority much more emphatically than others (such as Mayreder), but all essentially agreed upon this point. Today, most of those who study these subjects reject the notion that there is such a deterministic relationship between sex, gender, and sexuality.

Analyzing concepts of sex and gender in terms of ontological and intellectual priority may have political utility, since it suggests that sex and gender can and indeed must be decoupled from each other (both ontologically and intellectually) if liberation is to be achieved. It is not enough to merely rebut the content of an argument—it is also necessary to analyze and subject to criticism the thought processes by which that argument came about. Additionally, investigating whether gender or sex is thought to have priority can also pay dividends in academic research, as feminists, gender theorists, and historians have shown in the last several decades.

Whether sex or gender is granted priority in a ‘system of thought,’ and whether that priority is intellectual, ontological or both, is not a transhistorical constant. The priorities assigned to sex, gender, or sexuality within a system of thought (whether formal or informal) have great significance for the content of that system. Moreover, those priorities can and do differ from those assigned to sex, gender, and sexuality within other systems. In particular, it is important for us today to be conscious of the degree to which we assign intellectual priority to sex, gender, or sexuality. While it is probably not possible (and perhaps not even desirable) to totally avoid thinking through a gendered or sexed lens, critical reflection on the conceptual separation of sex, gender, and sexuality can help us to achieve greater clarity in our own thought, and to offer more insightful analyses (and critiques) of the thought of others.

As I have shown in this dissertation, there is no necessary correlation between sexual conceptions and sexual politics. Nonetheless, I believe that any *just* sexual politics for the current day must include a means of recognizing differences of biological sex (as well as of gender and of sexuality), without marginalizing those differences politically or socially. A fixed conception of biological sex, which encourages (among other prejudices) the thought that trans people are ‘unnatural,’ is partly rooted in a widespread assumption that biological sex has been an unchanging constant throughout human history. The research that I have presented here shows that such an understanding is based on (and also encourages) a spurious reading of history. Further, such an understanding constitutes a distorted vision of the present state of biological knowledge, and thus of our understanding of the human bodies we indwell. It is a distortion because such a view lends itself to an over-emphasis on the elements of sex that are static (chromosomes) and to a corresponding under-emphasis on the other elements of sex (such as hormones, physical presence of genitals, and secondary sexual characteristics) that can change, both artificially and naturally (for example, through the normal aging process), over the course of a life.

Expanding our conception of biological sex to include a greater range of biological phenomena and the possibility of changes (both artificial and natural) to those phenomena within the life of a given person would bring about a fuller understanding of the conditions of human existence, freedom, and fulfillment. To do so is to recognize a vital aspect of what it means to be human. This may be particularly important for cis women and trans people, whose biological experiences are often ignored or assimilated to a presumed cis male default. For cis women, most of whom go through not only puberty but also menopause and often pregnancy, not to mention monthly menstruation cycles, the idea of sexual biology as static and unchanging is laughably at

odds with the facts of existence. And for trans people, the idea of static sexual biology is nothing less than an assault upon existence.

In the end, the adoption of a broader conception of biological sex, informed by the discussions of sexual spectra that took place a century ago, will not only lead to a more nuanced understanding of the bodies we humans inhabit; it will also, I hope, have the effect of rendering many sexual minorities shockingly, transgressively—normal. After all, it is not only trans people who go through sex changes. Under the broader conception of biological sex that I advocate, artificial sex changes of a qualitatively similar character occur for every person who experiences the loss or impairment of genitals or gonads because of accident or disease; and natural sex changes occur for every child who experiences puberty, for every woman who becomes pregnant or experiences menopause, and for every elderly person who experiences a diminution of sexual desire. Indeed, it prompts the question: is there anything more *normal* than a sex change? Our understanding of history plays an influential role in our understanding of the present. It is my hope that my work here has helped, in a historically justified way, to present a challenge to the dominant narrative of biological sex as fixed and unalterable. As Hirschfeld would say, *per scientiam ad justitiam*.

Bibliography

Archives

Archiv der Universität Wien. Vienna, Austria.

Bibliothek und Archiv der Magnus-Hirschfeld-Gesellschaft. Berlin, Germany.

Kinsey Institute Archival Collections. Indiana University, Bloomington, IN.

Landesarchiv Berlin. Berlin, Germany.

Rare Book and Manuscript Collection. New York Academy of Medicine. New York, NY.

Wienbibliothek im Rathaus. Vienna, Austria.

Published Sources

Aminoff, Michael J. *Brown-Séquard: A Visionary of Science*. New York: Raven Press, 1993.

———. *Brown-Séquard: An Improbable Genius Who Transformed Medicine*. Oxford: Oxford University Press, 2011.

———. “The Life and Legacy of Brown-Séquard.” *Brain* 140, no. 5 (May 1, 2017): 1525–32. doi:10.1093/brain/awx071.

Anderson, Harriet. *Utopian Feminism: Women’s Movements in fin-de-siècle Vienna*. New Haven: Yale University Press, 1992.

Angelides, Steven. *A History of Bisexuality*. Chicago: University of Chicago Press, 2001.

Atherton, Gertrude. *Black Oxen*. New York: Boni and Liveright, 1923.

Bauer, Heike. *The Hirschfeld Archives: Violence, Death, and Modern Queer Culture*. Temple University Press, 2017.

- . “Theorizing Female Inversion: Sexology, Discipline, and Gender at the Fin de Siècle.” *Journal of the History of Sexuality* 18, no. 1 (January 2009): 84–102.
doi:10.1353/sex.0.0040.
- Bauer, J. Edgar. “Magnus Hirschfeld’s Doctrine of Sexual Intermediaries and the Transgender Politics of (No-)Identity.” In *Past and Present of Radical Sexual Politics*, edited by Gert Hekma, 41–55. Amsterdam: Mosse Foundation for the Promotion of Gay and Lesbian Studies at the University of Amsterdam, 2004.
- . “Sexuality and Its Nuances: On Magnus Hirschfeld’s Sexual Ethnology and China’s Sapiential Heritage.” *Anthropological Notebooks* 17 (January 1, 2011): 5–27.
- . “The Sexologist and the Poet: On Magnus Hirschfeld, Rabindranath Tagore, and the Critique of Sexual Binarity.” *Rupkatha Journal on Interdisciplinary Studies in Humanities* 2, no. 4 (November 2010): 447–70.
- Baumgartner, Marianne. *Der Verein der Schriftstellerinnen und Künstlerinnen in Wien (1885–1938)*. Vienna: Böhlau Verlag, 2015.
- Beachy, Robert. *Gay Berlin: Birthplace of a Modern Identity*. New York: Knopf, 2014.
- . “The German Invention of Homosexuality.” *The Journal of Modern History* 82, no. 4 (December 1, 2010): 801–38. doi:10.1086/656077.
- Beauvoir, Simone de. *The Second Sex*. Translated by H. M. Parshley. New York: Knopf, 1953. Originally published as *Le deuxième sexe*. 1949.
- . *The Second Sex*. Translated by Constance Borde and Sheila Malovany-Chevalier. New York: Vintage, 2011. Originally published as *Le deuxième sexe*. 1949.
- Bell, A.S., D. Brown, and N.K. Terrett. Pyrazolopyrimidinone antianginal agents. U.S. Patent 5,250,534 A, filed May 14, 1992, and issued October 5, 1993.

- Beller, Steven. "Otto Weininger as Liberal?" In *Jews and Gender: Responses to Otto Weininger*, edited by Nancy A. Harrowitz and Barbara Hyams, 91–102. Philadelphia: Temple University Press, 1995.
- Benjamin, Harry. "Eugen Steinach, 1861–1944: A Life of Research." *The Scientific Monthly* 61, no. 6 (1945): 427–42.
- . "Reminiscences." *The Journal of Sex Research* 6, no. 1 (February 1970): 3–9.
- . "The Effects of Vasectomy (Steinach Operation)." *American Medicine*, n. s., XVII, no. 8 (August 1922): 435–43.
- . *The Transsexual Phenomenon*. New York: Ace, 1966.
- Berliner, Brett A. "'Gods We Were': Rejuvenation as Social Metaphor in Interwar Pulp Fiction in Europe and the United States." *Interdisciplinary Humanities* 30, no. 1 (Spring 2013): 101–12.
- Berthold, Arnold Adolf. "Transplantation der Hoden." *Archiv für Anatomie, Physiologie, und wissenschaftliche Medicin*, 1849, 42–46.
- Berthold, Arnold Adolf, and D. P. Quiring. "The Transplantation of Testicles." *Bulletin of the History of Medicine* 16 (1944): 399–401.
- Birke, Lynda. "Sitting on the Fence: Biology, Feminism, and Gender-Bending Environments." *Women's Studies International Forum* 23, no. 5 (September 1, 2000): 587–99.
doi:10.1016/S0277-5395(00)00127-8.
- Blasius, Mark, and Shane Phelan, eds. *We Are Everywhere: A Historical Sourcebook of Gay and Lesbian Politics*. New York: Routledge, 1997.
- Bloch, Iwan. *Das Sexualleben unserer Zeit in seinen Beziehungen zur modernen Kultur*. 2nd & 3rd ed. Berlin: L. Marcus, 1907. Originally published in 1906.

- Blum, Kurt. "Homosexualität und Pubertätsdruse." *Zentrallblatt für die gesamte Neurologie und Psychiatrie* 31 (1923): 161–68.
- Borell, Merriley. "Brown-Séquard's Organotherapy and Its Appearance in America at the End of the Nineteenth Century." *Bulletin of the History of Medicine* 50, no. 3 (Fall 1976): 309–320.
- . "Organotherapy, British Physiology, and Discovery of the Internal Secretions." *Journal of the History of Biology* 9, no. 2 (1976): 235–68.
- Breger, Claudia. "Feminine Masculinities: Scientific and Literary Representations of 'Female Inversion' at the Turn of the Twentieth Century." *Journal of the History of Sexuality* 14, no. 1/2 (2005): 76–106.
- Brennan, Toni, and Peter Hegarty. "Magnus Hirschfeld, His Biographies and the Possibilities and Boundaries of 'Biography' as 'Doing History.'" *History of the Human Sciences* 22, no. 5 (December 2009): 24–46.
- Brown-Séquard, Charles-Édouard. "Des effets produits chez l'homme par des injections sous-cutanées d'une liquide retiré des testicules frais de cobaye et de chien." *Comptes rendus hebdomadaires de séances et mémoires de la Société de Biologie* 9, no. 1 (1889): 415–19.
- . "Expérience démontrant la puissance dynamogénique chez l'homme d'un liquide extrait de testicules d'animaux." *Archives de physiologie normale et pathologique* 5, no. 1 (1889): 651–58.
- Brubaker, Rogers. *Citizenship and Nationhood in France and Germany*. Cambridge, MA: Harvard University Press, 1992.
- Butler, Judith. *Bodies That Matter: On the Discursive Limits of "Sex."* New York: Routledge, 1993.

- . *Gender Trouble: Feminism and the Subversion of Identity*. 2nd ed. New York: Routledge, 1999. Originally published in 1990.
- . *Undoing Gender*. New York: Routledge, 2004.
- Carpenter, Edward. *Love's Coming of Age; a Series of Papers on the Relations of the Sexes*. New York: Kennerley, 1911. Originally published in 1896.
- . *The Intermediate Sex: A Study of Some Transitional Types of Men and Women*. New York: Kennerley, 1912. Originally published in 1908.
- Carter, Julian. "Normality, Whiteness, Authorship: Evolutionary Sexology and the Primitive Pervert." In *Science and Homosexualities*, edited by Vernon A. Rosario, 155–76. New York: Routledge, 1996.
- Chase, Cheryl. "Hermaphrodites with Attitude: Mapping the Emergence of Intersex Political Activism." *GLQ: A Journal of Lesbian and Gay Studies* 4, no. 2 (April 1998): 189–211. doi:10.1215/10642684-4-2-189.
- Chauncey, George. "From Sexual Inversion to Homosexuality: Medicine and the Changing Conceptualization of Female Deviance." *Salmagundi*, no. 58/59 (1982–3): 114–46.
- . *Gay New York: Gender, Urban Culture, and the Makings of the Gay Male World, 1890–1940*. New York: Basic Books, 1994.
- Clark, Anna. *Desire: A History of European Sexuality*. New York: Routledge, 2008.
- Colby, F. M. "The Book of the Month." *The North American Review* 198 (December 1913): 874–80.
- Confino, Alon. *The Nation as a Local Metaphor: Württemberg, Imperial Germany, and National Memory, 1871–1918*. Chapel Hill: University of North Carolina Press, 1997.

- Crawford, Katherine. *European Sexualities, 1400–1800*. Cambridge: Cambridge University Press, 2007.
- Crouthamel, Jason. *An Intimate History of the Front: Masculinity, Sexuality, and German Soldiers in the First World War*. New York: Palgrave Macmillan, 2014.
- . *The Great War and German Memory: Society, Politics and Psychological Trauma, 1914–1945*. Exeter: University of Exeter Press, 2009.
- Cryle, Peter, and Christopher E. Forth, eds. *Sexuality at the Fin de Siècle: The Makings of a “Central Problem.”* Newark, DE: University of Delaware Press, 2008.
- Darwin, Charles. *The Variation of Animals and Plants Under Domestication*. 1st ed. 2 vols. London: John Murray, 1868.
- Das Wissenschaftlich-humanitäres Komitee. *Was soll das Volk vom Dritten Geschlecht wissen?* Leipzig: Max Spohr, 1901.
- Dhejne, Cecilia, Roy Van Vlerken, Gunter Heylens, and Jon Arcelus. “Mental Health and Gender Dysphoria: A Review of the Literature.” *International Review of Psychiatry* 28, no. 1 (2016): 44–57.
- Dickinson, Edward Ross. “‘A Dark, Impenetrable Wall of Complete Incomprehension’: The Impossibility of Heterosexual Love in Imperial Germany.” *Central European History* 40, no. 03 (September 2007). doi:10.1017/S0008938907000805.
- . *Sex, Freedom, and Power in Imperial Germany, 1880–1914*. Cambridge: Cambridge University Press, 2014.
- Dickinson, Tommy. *“Curing Queers”: Mental Nurses and Their Patients, 1935–1974*. Manchester: Manchester University Press, 2014.

- Dose, Ralf. *Magnus Hirschfeld: The Origins of the Gay Liberation Movement*. Translated by Edward H. Willis. New York: Monthly Review Press, 2014. Originally published as *Magnus Hirschfeld: Deutscher–Jude–Wetbürger*. 2005.
- “Dr. Steinach Coming to Make Old Young.” *The New York Times*. February 9, 1922.
- Dreger, Alice Domurat. *Hermaphrodites and the Medical Invention of Sex*. Cambridge, MA: Harvard University Press, 1998.
- . “Hermaphrodites in Love: The Truth of the Gonads.” In *Science and Homosexualities*, edited by Vernon A. Rosario, 46–66. New York: Routledge, 1996.
- Drescher, Jack. “I’m Your Handyman: A History of Reparative Therapies.” *Journal of Homosexuality* 36, no. 1 (June 22, 1998): 19–42. doi:10.1300/J082v36n01_02.
- Ebershoff, David. *The Danish Girl*. New York: Viking, 2000.
- Elbe, Lili. *Man into Woman: An Authentic Record of a Change of Sex*. Edited by Niels Hoyer. Translated by H. J. Stenning. London: Jarrolds, 1933. Originally published as *Fra Mand til Kvinde. Lili Elbes Bekendelser*. 1931.
- Elberskirchen, Johanna. *Was hat der Mann aus Weib, Kind und sich gemacht? Revolution und Erlösung des Weibes. Eine Abrechnung mit dem Mann—Ein Wegweiser in die Zukunft!* 2nd ed. Berlin, 1904.
- Eley, Geoff. *Reshaping the German Right: Radical Nationalism and Political Change after Bismarck*. Ann Arbor: University of Michigan Press, 1991.
- Evans, Richard J. *The Feminist Movement in Germany, 1894–1933*. Beverly Hills: SAGE Publications, 1976.
- Fausto-Sterling, Anne. *Myths of Gender: Biological Theories about Women and Men*. New York: Basic Books, 1992.

- . *Sex/Gender: Biology in a Social World*. New York: Routledge, 2012.
- . *Sexing the Body: Gender Politics and the Construction of Sexuality*. New York: Basic Books, 2000.
- Felski, Rita. *The Gender of Modernity*. Cambridge, MA: Harvard University Press, 1995.
- Field, Corinne T. *The Struggle for Equal Adulthood: Gender, Race, Age, and the Fight for Citizenship in Antebellum America*. Chapel Hill: University of North Carolina Press, 2014.
- Field, Corinne T., and Nicholas L. Syrett, eds. *Age in America: The Colonial Era to the Present*. New York: New York University Press, 2015.
- Fio, Duru, Ajayi S, and Azu Oo. “The Effect of Unilateral Vasectomy on Testosterone and Testicular Parameters in the Adult Male African Giant Rat (*Cricetomys gambianus*).” *African Health Sciences* 13, no. 2 (June 2013): 483–89. doi:10.4314/ahs.v13i2.40.
- Fliess, Wilhelm. *Der Ablauf des Lebens: Grundlegung zur exakten Biologie*. Leipzig, 1906.
- . *Die Beziehungen zwischen Nase und weiblichen Geschlechtsorganen in ihrer biologischen Bedeutung dargestellt*. Leipzig: Franz Deuticke, 1897.
- Forel, Auguste. *Die sexuelle Frage. Eine naturwissenschaftliche, psychologische, hygienische und soziologische Studie für Gebildete*. 8th & 9th ed. München: E. Reinhardt, 1909. Originally published in 1905.
- . *The Sexual Question: A Scientific, Psychological, Hygienic and Sociological Study*. Translated by C. F. Marshall. New York: Rebman, 1908.
- Foucault, Michel. *The History of Sexuality, Volume I: An Introduction*. Translated by Robert Hurley. New York: Random House, 1978. Originally published as *Histoire de la sexualité I: La volonté de savoir*. Paris: Editions Gallimard, 1976.

- . *The Order of Things: An Archaeology of the Human Sciences*. Vintage Books ed. New York: Random House, 1994. Originally published as *Les mots et les choses*. Paris: Editions Gallimard, 1966.
- Freud, Sigmund. *Civilization and Its Discontents*. Translated by James Strachey. New York: Norton, 1989. Originally published as *Das Unbehagen in der Kultur*. 1930.
- . “The Psychogenesis of a Case of Homosexuality in a Woman.” In *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, edited by James Strachey, translated by Barbara Low and R. Gabler, 18:145–76. London: Hogarth, 1955. Originally published as “Über die Psychogenese eines Falles von Weiblicher Homosexualität.” 1920.
- . *Three Essays on the Theory of Sexuality*. In *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, translated by James Strachey, 7:123–248. London: Hogarth, 1953. Originally published as “Drei Abhandlungen zur Sexualtheorie.” 1905.
- Friedlaender, Benedict. *Denkschrift verfasst für die Freunde und Fondszeichner des Wissenschaftlich-humanitären Komitees (im Namen der Sezession des Wissenschaftlich-humanitären Komitees)*. Berlin: Privately printed, 1907.
- . *Die Liebe Platons im Lichte der modernen Biologie. Gesammelte kleinere Schriften*. Treptow-Berlin: Bernhard Zack, 1909.
- . *Die Renaissance des Eros Uranios: Die physiologische Freundschaft, ein normaler Grundtrieb des Menschen und eine Frage der männlichen Gesellungsfreiheit*. Schmargendorf-Berlin: Otto Lehmann, 1904.

- . “Male and Female Culture: A Causal-Historical View.” In *Homosexuality and Male Bonding in Pre-Nazi Germany*, edited by Harry Oosterhuis, translated by Hubert Kennedy, 207–17. New York: Harrington Park, 1991.
- . *Männliche und weibliche Kultur. Eine kausalhistorische Betrachtung*. Leipzig: Deutscher-Kampf Verlag, 1906.
- . “Memoir for the Friends and Contributors of the Scientific-Humanitarian Committee in the Name of the Secession of the Scientific-Humanitarian Committee.” Translated by Hubert Kennedy. *Journal of Homosexuality* 22, no. 1–2 (1991): 71–84.
- Funk, Casimir, Benjamin Harrow, and A. Lejwa. “The Male Hormone.” *American Journal of Physiology* 92, no. 2 (March 1930): 440–49.
- Garland-Thomson, Rosemarie. *Extraordinary Bodies: Figuring Physical Disability in American Culture and Literature*. New York: Columbia University Press, 1997.
- Gay, Peter. *Freud, Jews, and Other Germans: Masters and Victims in Modernist Culture*. Oxford: Oxford University Press, 1978.
- . “Sigmund Freud: A Brief Life.” In *Civilization and Its Discontents*, by Sigmund Freud, ix–xxii. New York: Norton, 1989.
- Genel, Myron. “Gender Verification No More?” *Medscape General Medicine* 2, no. 3 (2000).
- Gilmore, David. *Manhood in the Making: Cultural Concepts of Masculinity*. New Haven: Yale University Press, 1990.
- Greenway, Judy. “It’s What You Do with It That Counts: Interpretations of Otto Weininger.” In *Sexology in Culture: Labelling Bodies and Desires*, edited by Lucy Bland and Laura Doan, 27–43. Chicago: University of Chicago Press, 1998.

- Ha, Nathan Q. "The Riddle of Sex: Biological Theories of Sexual Difference in the Early Twentieth-Century." *Journal of the History of Biology* 44, no. 3 (2011): 505–46.
- Haig, David. "The Inexorable Rise of Gender and the Decline of Sex: Social Change in Academic Titles, 1945–2001." *Archives of Sexual Behavior* 33, no. 2 (April 2004): 87–96.
- Haire, Norman. *Rejuvenation: The Work of Steinach, Voronof, and Others*. London: G. Allen & Unwin, 1924.
- Hall, Diana Long. "Biology, Sex Hormones and Sexism in the 1920's." *Philosophical Forum* 5, no. 1–2 (1973–4): 81–96.
- Halperin, David M. "How to Do the History of Male Homosexuality." In *How to Do the History of Homosexuality*, by David M. Halperin, 104–37. Chicago: University of Chicago Press, 2002.
- . "One Hundred Years of Homosexuality." *Diacritics* 16, no. 2 (1986): 34–45.
doi:10.2307/465069.
- Haraway, Donna. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge, 1991.
- Harms, Ernest. "Forty-four Years of Correspondence between Eugen Steinach and Harry Benjamin." *Bulletin of the New York Academy of Medicine* 45, no. 8 (1969): 761–766.
- Harrow, Benjamin. *Glands in Health and Disease*. New York: E. P. Dutton & company, 1922.
<http://search.lib.virginia.edu/catalog/u903682>.
- Harrowitz, Nancy A., and Barbara Hyams, eds. *Jews and Gender: Responses to Otto Weininger*. Philadelphia: Temple University Press, 1995.

- Harvey, Karen. "The Substance of Sexual Difference: Change and Persistence in Representations of the Body in Eighteenth-Century England." *Gender & History* 14, no. 2 (August 2002): 202–23.
- Herrn, Rainer. "On the History of Biological Theories of Homosexuality." In *Sex, Cells, and Same-Sex Desire: The Biology of Sexual Preference*, edited by John P. De Cecco and David Allen Parker, 31–56. New York: Harrington Park Press, 1995.
- Herrn, Rainer, and Christine N. Brinckmann. "Von Ratten und Männern: *Der Steinach-Film*." *Montage AV* 14, no. 2 (2005): 78–100.
- Herzer, Manfred. *Magnus Hirschfeld: Leben und Werk eines jüdischen, schwulen und sozialistischen Sexologen*. 2nd ed. Hamburg: MännerschwarmSkript, 2001. Originally published in 1992.
- . *Magnus Hirschfeld und seine Zeit*. Berlin: De Gruyter Oldenbourg, 2017.
doi:10.1515/9783110548426.
- Herzog, Dagmar. *Sex After Fascism: Memory and Morality in Twentieth-Century Germany*. Princeton: Princeton University Press, 2005.
- . *Sexuality in Europe: A Twentieth-Century History*. Cambridge: Cambridge University Press, 2011.
- Hess, Rex A. "Estrogen in the Adult Male Reproductive Tract: A Review." *Reproductive Biology and Endocrinology* 1 (2003): 52. doi:10.1186/1477-7827-1-52.
- Higgs, David. *Queer Sites: Gay Urban Histories Since 1600*. Routledge, 2002.
- Hirschfeld, Magnus. *Der urnische Mensch*. Leipzig: Max Spohr, 1903.
- . *Die Homosexualität des Mannes und des Weibes*. 1st ed. Berlin: Louis Marcus Verlagsbuchhandlung, 1914.

- . *Die Homosexualität des Mannes und des Weibes*. 2nd ed. Berlin: Louis Marcus Verlagsbuchhandlung, 1920.
- . “Die objektive Diagnose der Homosexualität.” *Jahrbuch für sexuelle Zwischenstufen* 1 (1899): 4–35.
- . *Die Transvestiten. Eine Untersuchung über den erotischen Verkleidungstrieb*. Berlin: Alfred Pulvermacher & Co., 1910.
- . “Die Untersuchungen und Forschungen von Professor E. Steinach über künstliche Vermännlichung, Verweiblichung und Hermaphrodisierung.” *Jahrbuch für sexuelle Zwischenstufen* 17 (1917): 3–21.
- . *Die Weltreise eines Sexualforschers*. Brugg: Bözberg-Verlag, 1933.
- . “Die Zwischenstufen-‘Theorie.’” *Sexual-Probleme* 6 (1910): 116–36.
- . *Für wen und wie ist das Radfahren gesund?* Berlin: Tessaro-Verlag, 1901.
- . *Geschlechtskunde*. 5 vols. Stuttgart: Julius Püttmann, 1926–30.
- . *Geschlechtsübergänge. Mischungen männlicher und weiblicher Geschlechtscharaktere. (Sexuelle Zwischenstufen)*. Leipzig: W. Malende, 1905.
- . *Künstliche Verjüngung. Künstliche Geschlechtsumwandlung. Die Entdeckungen Prof. Steinachs und ihre Bedeutung*. Berlin: Johndorff & Co., 1920.
- . *Men and Women: The World Journey of a Sexologist*. Translated by O. P. Green. New York: G. P. Putnam’s Sons, 1935.
- . “Operative Behandlung der Homosexualität.” *Vierteljahresberichte des Wissenschaftliche-Humanitären Komitees / Jahrbuch für sexuelle Zwischenstufen* 17 (1917): 189–90.

- . [Th. Ramien]. *Sappho und Sokrates, oder Wie erklärt sich die Liebe der Männer und Frauen zu Personen des eigenen Geschlechts?* Leipzig: Max Spohr, 1896.
- . *Sexualpathologie. Ein Lehrbuch für Ärzte und Studierende*. 3 vols. Bonn: Marcus & Weber, 1917–20.
- . *The Homosexuality of Men and Women*. Translated by Michael A. Lombardi-Nash. Amherst, NY: Prometheus Books, 2000. Originally published as *Die Homosexualität des Mannes und des Weibes*. 1914.
- . *Transvestites: The Erotic Drive to Cross Dress*. Translated by Michael A. Lombardi-Nash. Buffalo, NY: Prometheus Books, 1991. Originally published as *Die Transvestiten. Eine Untersuchung über den erotischen Verkleidungstrieb*. 1910.
- . “Vorwort.” In “*Vindex*.” *Social-juristische Studien über mann männliche Geschlechtsliebe*, by Karl Heinrich Ulrichs, 7–14. Leipzig: Max Spohr, 1898.
- . “Vorwort.” *Jahrbuch für sexuelle Zwischenstufen* 1 (1899): 1–3.
- Hirschfeld, Magnus, and Franziska Mann. *Was jede Frau vom Wahlrecht wissen muß!* Berlin: Alfred Pulvermacher, 1918.
- Hirshbein, Laura Davidow. “The Glandular Solution: Sex, Masculinity, and Aging in the 1920s.” *Journal of the History of Sexuality* 9, no. 3 (2000): 277–304.
- Hooper, Tom, dir. *The Danish Girl*, 2015.
- “Hose oder Noch: Ein Kapitel vom politzeilichen Mißtrauen.” *Die Welt am Sonntag*. January 22, 1906.
- International Olympic Committee. “IOC Regulations on Female Hyperandrogenism,” August 2012.

- http://www.olympic.org/Documents/Commissions_PDFfiles/Medical_commission/2012-06-22-IOC-Regulations-on-Female-Hyperandrogenism-eng.pdf.
- Irni, Sari. "On the Materialization of Hormone Treatment Risks: A Trans/Feminist Approach." *Body & Society* 23, no. 2 (2017): 106–31.
- Janik, Allan. "Therapeutic Nihilism: How Not to Write about Otto Weininger." In *Structure and Gestalt: Philosophy and Literature in Austria-Hungary and Her Successor States*, edited by Barry Smith, 263–92. Amsterdam: John Benjamins B.V., 1981.
- . "Weininger and the Science of Sex: Prolegomena to any Future Study." In *Decadence and Innovation: Austro-Hungarian Life and Art at the Turn of the Century*, edited by Robert B. Pynsent, 24–32. London: Weidenfeld and Nicholson, 1989.
- . Review of Otto Weininger, *Sex and Character: An Investigation of Fundamental Principles*. *Central European History* 39, no. 2 (June 2006): 317–20.
- Janik, Allan, and Stephen Toulmin. *Wittgenstein's Vienna*. New York: Simon & Schuster, 1973.
- Jara, J., and E. Lledó. "Historical Approach to the Surgical Treatment of Erectile Dysfunction." *Actas Urológicas Españolas (English Edition)* 37, no. 7 (July 1, 2013): 445–50.
doi:10.1016/j.acuroe.2013.01.007.
- Jerome, Roy, ed. *Conceptions of Postwar German Masculinity*. Albany: State University of New York Press, 2001.
- Jodl, Margarete Förster. *Friedrich Jodl, sein Leben und Wirken. Dargestellt nach Tagebüchern und Briefen*. Stuttgart: Cotta, 1920.
- Johnston, William M. *The Austrian Mind: An Intellectual and Social History, 1848–1938*. University of California Press, 1983.

- Jung, C. G. "Paracelsus as a Spiritual Phenomenon." In *Collected Works of C.G. Jung, Volume 13: Alchemical Studies*, by C. G. Jung, 109–90. translated by Gerhard Adler and R. F. C. Hull. Princeton: Princeton University Press, 1967. Originally published in 1942.
- Kampourakis, Kostas. "Mendel and the Path to Genetics: Portraying Science as a Social Process." *Science & Education* 22, no. 2 (2013): 293–324. doi:10.1007/s11191-010-9323-2.
- Katz, Jonathan Ned. *The Invention of Heterosexuality*. New York: Dutton, 1995.
- Kaye, Howard L. *The Social Meaning of Modern Biology: From Social Darwinism to Sociobiology*. New Haven: Yale, 1986.
- Kennedy, Hubert. "Karl Heinrich Ulrichs: First Theorist of Homosexuality." In *Science and Homosexualities*, edited by Vernon A. Rosario, 26–45. New York: Routledge, 1997.
- Kessler, Suzanne J., and Wendy McKenna. "Retrospective Response." *Feminism and Psychology* 10, no. 1 (2000): 66–72.
- Klaver, Elizabeth. "Erectile Dysfunction and the Post War Novel: *The Sun Also Rises* and *In Country*." *Literature and Medicine* 30, no. 1 (Spring 2012): 86–102.
- Koestler, Arthur. *The Case of the Midwife Toad*. Random House, 1972. Originally published in 1971.
- Kozminski, Michael A., and David A. Bloom. "A Brief History of Rejuvenation Operations." *The Journal of Urology* 187 (March 2012): 1130–34.
- Krafft-Ebing, Richard von. "Neue Studien auf dem Gebiete der Homosexualität." *Jahrbuch für sexuelle Zwischenstufen* 3 (1901): 1–36.
- . *Psychopathia Sexualis*. Translated by Franklin S. Klaf. New York: Arcade Publishing, 2011. Originally published in 1886.

- Kramer, Max. "From Georg Simmel to Stefan George: Sexology, Male Bonding, and Homosexuality." *German Studies Review* 41, no. 2 (May 2018): 275–95.
- Kraus, Karl. "Kehraus." *Die Fackel* 9, no. 229 (July 2, 1907): 1–17.
- Krementsov, Nikolai. "Hormones and the Bolsheviks: From Organotherapy to Experimental Endocrinology, 1918–1929." *Isis* 99, no. 3 (2008): 486–518. doi:10.1086/591710.
- . *Revolutionary Experiments: The Quest for Immortality in Bolshevik Science and Fiction*. Oxford: Oxford University Press, 2014.
- Kreuter, E. "Hodentransplantation und Homosexualität." *Zentrallblatt für Chirurgie* 49, no. 16 (April 22, 1922): 538–40.
- . "Über Hodenimplantation beim Menschen." *Zentrallblatt für Chirurgie* 46, no. 48 (November 29, 1919): 954–56.
- Kronfeld, Arthur. "Zur 'konstitutionellen Bedingtheit' der Homosexualität." *Mitteilungen des Wissenschaftlich-humanitären Komitees* 26 (December 1929): 225–27.
- Kuhn, Thomas S. *The Structure of Scientific Revolutions*. 4th ed. Chicago: University of Chicago Press, 2012. Originally published in 1962.
- Laqueur, Thomas W. *Making Sex: Body and Gender from the Greeks to Freud*. Cambridge, MA: Harvard University Press, 1990.
- . *Solitary Sex: A Cultural History of Masturbation*. New York: Zone Books, 2003.
- Le Rider, Jacques. *Der Fall Otto Weininger. Wurzeln des Antifeminismus und Antisemitismus*. Translated by Dieter Hornig. Vienna: Löcker, 1985. Originally published as *Le cas Otto Weininger. Racines de l'antiféminisme et de l'antisémitisme*. Presses Universitaires de France, 1982.

- . *Modernity and Crises of Identity: Culture and Society in Fin-de-Siècle Vienna*.
Translated by Rosemary Morris. New York: Continuum, 1993. Originally published in
1990.
- Leck, Ralph. “Anti-Essentialist Feminism Versus Misogynist Sexology in *Fin de siècle* Vienna.”
Modern Intellectual History 9, no. 01 (2012): 33–60. doi:10.1017/S147924431100045X.
- Leck, Ralph M. *Vita Sexualis: Karl Ulrichs and the Origins of Sexual Science*. Urbana:
University of Illinois Press, 2016.
- Leibniz, Gottfried Wilhelm. *The Monadology*. In *The Monadology and Other Philosophical
Writings*, translated by Robert Latta. Oxford: Clarendon Press, 1898. Originally written
in 1714.
- Leidinger, Christiane. “‘Anna Rüling’: A Problematic Foremother of Lesbian Herstory.”
Translated by Kathryn Brooks. *Journal of the History of Sexuality* 13, no. 4 (October
2004): 477–99.
- . *Keine Tochter aus gutem Hause: Johanna Elberskirchen (1864–1943)*. Konstanz: UVK
Verlagsgesellschaft, 2008.
- . “Theo A[nna] Sprüngli (1880–1953) alias Anna Rühling/Th. Rüling/Th. A. Rüling—
erste biographische Mosaiksteine zu einer zwiespältigen Ahnin lesbischer Herstory.”
Mitteilungen der Magnus Hirschfeld Gesellschaft 35/36 (2003): 28–39.
- Leng, Kirsten. “Anna Rüling, Michel Foucault, and the ‘Tactical Polyvalence’ of the Female
Homosexual.” In *After The History of Sexuality: German Genealogies with and beyond
Foucault*, edited by Scott Spector, Helmut Puff, and Dagmar Herzog, 95–108. New York:
Berghahn Books, 2012.

- . “Magnus Hirschfeld’s Meanings: Analysing Biography and the Politics of Representation.” *German History* 35, no. 1 (March 2017): 96–116.
doi:10.1093/gerhis/ghw142.
- . “Permutations of the Third Sex: Sexology, Subjectivity, and Antimaternalist Feminism at the Turn of the Twentieth Century.” *Signs* 40, no. 1 (2014): 227–54.
- . *Sexual Politics and Feminist Science: Women Sexologists in Germany, 1900–1933*. Ithaca: Cornell University Press, 2018.
- LeVay, Simon. *Gay, Straight, and the Reason Why: The Science of Sexual Orientation*. Oxford, New York: Oxford University Press, 2011.
- . *Queer Science: The Use and Abuse of Research into Homosexuality*. Cambridge, Mass: The MIT Press, 1996.
- . *The Sexual Brain*. Cambridge, Mass: MIT Press, 1993.
- Lichtenstern, Robert. “Bisherige Erfolge der Hodentransplantation beim Menschen.” *Jahreskurse für ärztliche Fortbildung* 11, no. 4 (1920): 8–11.
- . *Die Überpflanzung der Männlichen Keimdrüse*. Vienna: Verlag von Julius Spencer, 1924.
- . “Mit Erfolg ausgeführte Hodentransplantation am Menschen.” *Münchener Medizinische Wochenschrift* 63, no. 19 (May 9, 1916): 673–75.
- Lisser, Hans. “The Endocrine Society—The First Forty Years (1917–1957).” *Endocrinology* 80 (1967): 5–28.
- Lock, Stephen. “‘O That I Were Young Again’: Yeats and the Steinach Operation.” *British Medical Journal* 287, no. 6409 (December 24, 1983): 1964–68.

Loe, Meika. *The Rise of Viagra: How the Little Blue Pill Changed Sex in America*. New York: New York University Press, 2004.

“Lokales.” *Berliner Börsen-Zeitung*, no. 129 (March 18, 1913): 5.

Lombroso, Cesare. “Liebe, Selbstmord und Verbrechen.” *Zeitschrift für Sexualwissenschaft* 1, no. 7 (July 1908).

Lombroso, Cesare, and Guglielmo Ferrero. *Criminal Woman, the Prostitute, and the Normal Woman*. Translated by Nicole Hahn Rafter and Mary Gibson. Durham: Duke University Press, 2004.

Mak, Geertje. *Doubting Sex: Inscriptions, Bodies and Selves in Nineteenth-Century Hermaphrodite Case Histories*. Manchester: Manchester University Press, 2012.

Makela, Maria. “Rejuvenation and Regen(d)eration: Der Steinachfilm, Sex Glands, and Weimar-Era Visual and Literary Culture.” *German Studies Review* 38, no. 1 (February 2015): 35–62.

———. “Rejuvenation and Regen(d)eration: Der Steinachfilm, Sex Glands, and Weimar-Era Visual and Literary Culture.” *German Studies Review* 38, no. 1 (February 3, 2015): 35–62. doi:10.1353/gsr.2015.0031.

Mancini, Elena. *Magnus Hirschfeld and the Quest for Sexual Freedom: A History of the First International Sexual Freedom Movement*. New York: Palgrave Macmillan, 2010.

Marhoefer, Laurie. “Degeneration, Sexual Freedom, and the Politics of the Weimar Republic, 1918–1933.” *German Studies Review* 34, no. 3 (2011): 529–49.

———. *Sex and the Weimar Republic: German Homosexual Emancipation and the Rise of the Nazis*. Toronto: University of Toronto Press, 2015.

- Martin, Emily. "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles." *Signs* 16, no. 3 (1991): 485–501.
- Mayer, Lawrence S., and Paul McHugh. "Sexuality and Gender: Findings from the Biological, Psychological, and Social Sciences." *The New Atlantis* 50 (Fall 2016): 4–143.
- Mayreder, Rosa. *A Survey of the Woman Problem*. Translated by Herman Scheffauer. New York: George H. Doran, 1913. Originally published as *Zur Kritik der Weiblichkeit*. 1905.
- . *Gender and Culture*. Translated by Pamela S. Saur. Riverside, CA: Ariadne Press, 2009. Originally published as *Geschlecht und Kultur*. 1923.
- . *Zur Kritik der Weiblichkeit: Essays*. Jena: Eugen Diederichs, 1922. Originally published in 1905.
- McHugh, Paul. "Surgical Sex." *First Things* 147 (November 2004): 34–38.
- . "Transgenderism: A Pathogenic Meme." *Public Discourse*, June 10, 2015.
<http://www.thepublicdiscourse.com/2015/06/15145>.
- McLaren, Angus. *Impotence: A Cultural History*. Chicago: University of Chicago Press, 2007.
- . *Twentieth-Century Sexuality: A History*. Oxford: Blackwell, 1999.
- Medvei, V. C. *The History of Clinical Endocrinology: A Comprehensive Account of Endocrinology from Earliest Times to the Present Day*. Rev. ed. New York: Parthenon, 1993. Originally published as *A History of Clinical Endocrinology*. 1982.
- Megill, Allan. *Historical Knowledge, Historical Error: A Contemporary Guide to Practice*. Chicago: University of Chicago Press, 2007.
- . "Theological Presuppositions of the Evolutionary Epic: From Robert Chambers to E. O. Wilson." *Studies in History and Philosophy of Science Part C: Studies in History and*

- Philosophy of Biological and Biomedical Sciences* 58 (August 2016): 24–32.
doi:10.1016/j.shpsc.2015.12.005.
- Meyer, Sabine. “Divine Interventions: (Re)birth and Creation Narratives in *Fra mand til kvinder—Lili Elbes bekendelser*.” *Kvinder, Køn & Forsking*, no. 3–4 (2011): 68–76.
- . “*Wie Lili zu einem richtigen Mädchen wurde*”: *Lili Elbe: Zur Konstruktion von Geschlecht und Identität zwischen Medialisierung, Regulierung und Subjektivierung*. Bielefeld: transcript, 2015.
- Meyerowitz, Joanne. “A History of ‘Gender.’” *The American Historical Review* 113, no. 5 (December 2008): 1346–1356.
- . *How Sex Changed: A History of Transsexuality in the United States*. Cambridge, MA: Harvard University Press, 2002.
- Miciotto, Robert J. “Carl Rokitansky: A Reassessment of the Hematohumoral Theory of Disease.” *Bulletin of the History of Medicine* 52, no. 2 (Summer 1978): 183–199.
- Miller, Nicole L., and Brant R. Fulmer. “Injection, Ligation and Transplantation: The Search for the Glandular Fountain of Youth.” *The Journal of Urology* 177, no. 6 (June 1, 2007): 2000–2005. doi:10.1016/j.juro.2007.01.135.
- Möbius, Paul Julius. *Geschlecht und Unbescheidenheit*. Halle (Saale): Marhold, 1904.
- . *Über den physiologischen Schwachsinn des Weibes*. Halle (Saale): Marhold, 1900.
- . Review of Otto Weininger, *Geschlecht und Charakter*. *Schmidts Jahrbücher der in- und ausländischen gesammten Medicin* 279, no. 2 (1903): 213.
- Money, John. “Hermaphroditism, Gender, and Precocity in Hyperadrenocorticism: Psychologic Findings.” *Bulletin of the Johns Hopkins Hospital* 96 (1955): 253–64.

- Money, John, Joan G. Hampson, and John L. Hampson. "Hermaphroditism: Recommendations Concerning Assignment of Sex, Change of Sex and Psychologic Management." *Bulletin of the Johns Hopkins Hospital* 97, no. 4 (October 1955): 284–300.
- Moore, Carl R., and Dorothy Price. "Gonad Hormone Functions and the Reciprocal Influence between Gonads and Hypophysis with Its Bearing on the Problem of Sex Hormone Antagonism." *American Journal of Anatomy* 50 (1932): 13–67.
- Morey, Anne. "'The Gland School': Gertrude Atherton and the Two *Black Oxen*." *Framework* 54, no. 1 (2013): 59–76.
- Mosse, George L. *Nationalism and Sexuality: Respectability and Abnormal Sexuality in Modern Europe*. New York: Fertig, 1985.
- Mosse, George L. *The Image of Man: The Creation of Modern Masculinity*. Oxford: Oxford University Press, 1996.
- Mühsam, Richard. "Chirurgische Eingriffe bei Anomalien des Sexuallebens." *Die Therapie der Gegenwart* 67 (October 1926): 451–55.
- . "Die Einfluß der Kastration auf Sexual Neurotiker." *Deutsche Medizinische Wochenschrift* 47, no. 6 (February 10, 1921): 155–56.
- . "Über die Beeinflussung des Geschlechtslebens durch freie Hodenüberpflanzung." *Deutsche Medizinische Wochenschrift* 46, no. 30 (July 22, 1920): 823–25.
- Müller, Johannes. *Bildungsgeschichte der Genitalien aus anatomischen Untersuchungen an Embryonen des Menschen und der Thiere, nebst einem Anhang über die chirurgische Behandlung der Hypospadiä*. Düsseldorf: Arnz, 1830.
- Nägeli, Carl von. *A Mechanico-Physiological Theory of Organic Evolution*. Translated by V. A. Clark. Chicago: Open Court, 1898.

- . *Mechanisch-physiologische Theorie der Abstammungslehre*. Munich: Oldenbourg, 1884.
- Nanninga, John B. *The Gland Illusion: Early Attempts at Rejuvenation through Male Hormone Therapy*. Jefferson, North Carolina: McFarland & Company, 2017.
- Nikolaev, Alexander. “Latin *Draucus*.” *Classical Quarterly* 64, no. 1 (2014): 316–20.
- Nordau, Max Simon. *Degeneration*. New York: H. Fertig, 1968. Originally published as *Entartung*. 1892.
- Nowotny, Helga, and Giuseppe Testa. *Naked Genes: Reinventing the Human in the Molecular Age*. Translated by Mitch Cohen. Cambridge: MIT Press, 2014. Originally published as *Die gläsernen Gene. Die Erfindung des Individuums im molekularen Zeitalter*. Suhrkamp, 2009.
- Nye, Robert. *Masculinity and Male Codes of Honor in Modern France*. Oxford: Oxford University Press, 1993.
- Oosterhuis, Harry. “Homosexual Emancipation in Germany Before 1933: Two Traditions.” *Journal of Homosexuality* 22, no. 1–2 (1991): 1–28.
- , ed. *Homosexuality and Male Bonding in Pre-Nazi Germany: The Youth Movement, the Gay Movement, and Male Bonding before Hitler’s Rise: Original Transcripts from Der Eigene, the First Gay Journal in the World*. Translated by Hubert Kennedy. New York: Harrington Park, 1991.
- . *Stepchildren of Nature: Krafft-Ebing, Psychiatry, and the Making of Sexual Identity*. Chicago: University of Chicago Press, 2000.
- Oswald, Richard, dir. *Anders als der Andern*. Germany, 1919.

- Oudshoorn, Nelly. *Beyond the Natural Body: An Archeology of Sex Hormones*. London: Routledge, 1994.
- . “Endocrinologists and the Conceptualization of Sex, 1920–1940.” *Journal of the History of Biology* 23, no. 2 (Summer 1990): 163–86.
- Park, Katharine, and Robert A. Nye. *Destiny Is Anatomy*, review of Thomas W. Laqueur, *Making Sex: Body and Gender from the Greeks to Freud*. *New Republic*, February 18, 1991.
- Peters, Kathrin. “Anatomy Is Sublime: The Photographic Activity of Wilhelm von Gloeden and Magnus Hirschfeld.” In *Not Straight from Germany: Sexual Publics and Sexual Citizenship Since Magnus Hirschfeld*, edited by Michael Thomas Taylor, Annette F. Timm, and Rainer Herrn, translated by Nicholas Grindell, 170–90. Ann Arbor: University of Michigan Press, 2017.
- Plato. “*The Symposium*.” In *The Symposium and The Phaedrus: Plato’s Erotic Dialogues*, translated by William S. Cobb, 11–59. Albany: State University of New York Press, 1993.
- Prebel, Julie. “Engineering Womanhood: The Politics of Rejuvenation in Gertrude Atherton’s *Black Oxen*.” *American Literature* 76, no. 2 (2004): 307–37.
- Probst, Ferdinand. *Der Fall Otto Weininger. Eine Psychiatrische Studie*. Wiesbaden: J.F. Bergmann, 1904.
- Rathke, Heinrich. “Beobachtungen und Betrachtungen über die Entwicklung der Geschlechtswerkzeuge bei den Wirbeltieren.” *Neueste Schriften der naturforschenden Gesellschaft in Danzig* 1, no. 4 (1825).
- Remak, Robert. *Untersuchungen über die Entwicklung der Wirbeltiere*. Berlin: G. Reimer, 1855.

- Rémy, Catherine. “‘Men Seeking Monkey-Glands’: The Controversial Xenotransplantations of Doctor Voronoff, 1910–30.” *French History* 28, no. 2 (June 2014): 226–40.
- Ren, Longquan, Qiang Weng, Miori Kishimoto, Gen Watanabe, Sukanya Jaroenporn, and Kazuyoshi Taya. “Effect of Short Period Vasectomy on FSH, LH, Inhibin and Testosterone Secretions, and Sperm Motility in Adult Male Rats.” *Experimental Animals* 60, no. 1 (2011): 47–56.
- Review of Robert Lichtenstern, *Die Überpflanzung der männlichen Keimdrüse*. *Journal of the American Medical Association* 84, no. 5 (January 31, 1925): 391.
- Rheinberger, Hans-Jörg. “Heredity and Its Entities Around 1900.” *Studies in History and Philosophy of Science* 39, no. 3 (September 1, 2008): 370–74.
doi:10.1016/j.shpsa.2008.06.008.
- Rodlauer, Hannelore. “Von ‘Eros und Psyche’ zu ‘Geschlecht und Charakter’: Unbekannte Weininger-Manuscripte im Archiv der Österreichischen Akademie der Wissenschaften.” *Österreichischen Akademie der Wissenschaften, philosophisch-historische Klasse*, no. 124 (1987): 110–39.
- Roper, John Herbert, Jr. “The *Gemeinschaft der Eigenen* and the Cultural Politics of Homoeroticism in Germany, 1896–1933.” PhD diss., University of Pennsylvania, 2014.
- Roper, Lyndal. *Oedipus and the Devil: Witchcraft, Sexuality, and Religion in Early Modern England*. New York: Routledge, 1994.
- Rüling, Anna [Theo A. Sprüngli]. “Dirne.” *Der Kampf* 8 (March 26, 1904): 228–30.
- [Theo A. Sprüngli]. “Gertrud Eysoldt.” *Der Kampf* 11 (April 21, 1904): 285–86.
- . “Welches Interesse hat die Frauenbewegung an der Lösung des homosexuellen Problems?” *Jahrbuch für sexuelle Zwischenstufen* 7 (1905): 129–51.

- [Th. Rülmg]. *Welcher unter Euch ohne Sunde ist... Bücher von der Schattenseite*. Leipzig: Max Spohr, 1906.
- [Theo A. Sprüngli]. "Wissenschaft. Institut für Sexualwissenschaft." *Neue Deutsche Frauenzeitung* 21 (October 2, 1919).
- . "What Interest Does the Women's Movement Have in the Homosexual Question?" In *We Are Everywhere: A Historical Sourcebook of Gay and Lesbian Politics*, edited by Mark Blasius and Shane Phelan, translated by Lillian Faderman and Brigitte Eriksson, 143–50. New York: Routledge, 1997. Originally published as "Welches Interesse hat die Frauenbewegung an der Lösung des homosexuellen Problems?" 1905.
- Sawin, Clark T. "Arnold Adolph Berthold and the Transplantation of Testes." *Endocrinologist* 6, no. 3 (May 1996): 164–68.
- Schmölzer, Hilde. *Rosa Mayreder: Ein Leben zwischen Utopie und Wirklichkeit*. Wien: Promedia, 2002.
- Schorske, Carl E. *Fin-de-Siècle Vienna: Politics and Culture*. New York: Knopf, 1979.
- Schröter, Michael. "Fließ vs. Weininger, Swoboda und Freud: Der Plagiatsstreit von 1906 im Lichte der Dokumente." *Psyche: Zeitschrift für Psychoanalyse und ihre Anwendungen* 56, no. 4 (April 2002): 338–68.
- Schwartz, Agatha. *Shifting Voices: Feminist Thought and Women's Writing in Fin-de-siècle Austria and Hungary*. Montreal: McGill-Queen's University Press, 2008.
- Scott, Joan Wallach. "Gender: A Useful Category of Historical Analysis." *The American Historical Review* 91, no. 5 (December 1986): 1053–75.
- . "Gender: Still a Useful Category of Analysis?" *Diogenes* 57, no. 1 (February 2010): 7–14.

- . *Only Paradoxes to Offer: French Feminists and the Rights of Man*. Cambridge, MA: Harvard University Press, 1996.
- Sedgwick, Eve Kosofsky. *Epistemology of the Closet*. 2nd ed. Berkeley: University of California Press, 2008. Originally published in 1990.
- Seeck, Andreas. “Einführung.” In *Durch Wissenschaft zur Gerechtigkeit? Textsammlung zur kritischen Rezeption des Schaffens von Magnus Hirschfeld*, edited by Andreas Seeck, 7–24. Münster: Lit Verlag, 2003.
- Sengoopta, Chandak. “Glandular Politics: Experimental Biology, Clinical Medicine, and Homosexual Emancipation in Fin-de-Siècle Central Europe.” *Isis* 89, no. 3 (1998): 445–73.
- . *Otto Weininger: Sex, Science, and Self in Imperial Vienna*. Chicago: University of Chicago Press, 2000.
- . *The Most Secret Quintessence of Life: Sex, Glands, and Hormones, 1850–1950*. Chicago: University of Chicago Press, 2006.
- Skidmore, Emily. *True Sex: The Lives of Trans Men at the Turn of the Twentieth Century*. New York: New York University Press, 2017.
- Slotopolsky, Benno. “Über Sexualoperationen, ihre biologischen Grundlagen und ihre praktischen Ergebnisse.” *Klinische Wochenschrift* 7 (1928): 675–81.
- Södersten, Per, David Crews, Cheryl Logan, and Rudolf Werner Soukup. “Eugen Steinach: The First Neuroendocrinologist.” *Endocrinology* 155, no. 3 (March 1, 2014): 688–95. doi:10.1210/en.2013-1816.
- Spector, Scott. “After *The History of Sexuality*? Periodicities, Subjectivities, Ethics.” In *After The History of Sexuality: German Genealogies with and beyond Foucault*, edited by

- Scott Spector, Helmut Puff, and Dagmar Herzog, 1–14. New York: Berghahn Books, 2012.
- Steakley, James D. "Cinema and Censorship in the Weimar Republic: The Case of *Anders als der Andern*." *Film History* 11, no. 2 (1999): 181–203.
- . "*Per scientiam ad justitiam*: Magnus Hirschfeld and the Sexual Politics of Innate Homosexuality." In *Science and Homosexualities*, edited by Vernon A. Rosario, 133–54. New York: Routledge, 1998.
- . *The Homosexual Emancipation Movement in Germany*. New York: Arno Press, 1975.
- . *The Writings of Dr. Magnus Hirschfeld: A Bibliography*. Toronto: Canadian Gay Archives, 1985.
- Steenstrup, J. J. S. *Untersuchungen über das Vorkommen des Hermaphroditismus in der Natur*. Translated by C. F. Hornschuch. Greifswald, 1846.
- Steinach, Eugen. "Biological Methods against the Process of Old Age." *Medical Journal and Record* 125 (1927): 77–81 & 161–64.
- . "Feminierung von Männchen und Maskulierung von Weibchen." *Zentralblatt für Physiologie* 27, no. 14 (October 4, 1913): 717–23.
- . "Geschlechtstrieb und echt sekundäre Geschlechtsmerkmale als Folge der innersekretorischen Funktion der Keimdrüsen." *Zentralblatt für Physiologie* XXIV, no. 13 (September 17, 1910): 551–66.
- . "Histologische Beschaffenheit der Keimdrüse bei homosexuellen Männern." *Archiv für Entwicklungsmechanik der Organismen* 46 (1920): 29–37.
- . "Künstliche und natürliche Zwitterdrüsen und ihre analogen Wirkungen." *Archiv für Entwicklungsmechanik der Organismen* 46, no. 4 (July 20, 1920): 12–28.

- . “Mitteilungen aus der biologischen Versuchsanstalt der Akademie der Wissenschaften in Wien (Physiologische Abteilung; Vorstand: E. Steinach). Nr. 36. Die antagonistisch-geschlechtsspezifische Wirkung der Sexualhormone vor und nach der Pubertät.” *Anzeiger der Akademie der Wissenschaften in Wien, Mathematisch-naturwissenschaftliche Klasse* 56, no. 11 (1919): 132–35.
- . “Mitteilungen aus der biologischen Versuchsanstalt der Akademie der Wissenschaften in Wien (Physiologische Abteilung; Vorstand: E. Steinach). Nr. 38. Experimentelle und histologische Beweise für den ursächlichen Zusammenhang von Homosexualität und Zwitterdrüse.” *Anzeiger der Akademie der Wissenschaften in Wien, Mathematisch-naturwissenschaftliche Klasse* 56, no. 11 (1919): 138–42.
- . “Motorische Funktionen hinterer Spinalnervenwurzeln.” *Archiv für die gesammte Physiologie des Menschen und der Thiere* 63 (1895): 593–622.
- . “Pubertätsdrüsen und Zwitterbildung.” *Archiv für Entwicklungsmechanik der Organismen* 42 (1916): 307–32.
- . *Sex and Life: Forty Years of Biological and Medical Experiments*. New York: The Viking Press, 1940.
- . “Über die centripetale Erregungsleitung im Bereiche des Spinalganglions.” *Archiv für die gesammte Physiologie des Menschen und der Thiere* 78 (1899): 291–314.
- . “Über die lokomotorische Funktion des Lichtes bei Cephalopoden.” *Archiv für die gesammte Physiologie des Menschen und der Thiere* 87 (1901): 38–41.
- . “Untersuchungen zur vergleichenden Physiologie der männlichen Geschlechtsorgane insbesondere der accessorischen Geschlechtsdrüsen.” *Archiv für die gesammte Physiologie des Menschen und der Thiere* 56 (1894): 304–38.

- . “Verjüngung durch experimentelle Neubelebung der alternden Pubertätsdrüse.” *Archiv für Entwicklungsmechanik der Organismen* 46 (June 9, 1920): 553–618.
- . “Willkürliche Umwandlung von Säugetier-Männchen in Tiere mit ausgeprägt weiblichen Geschlechtscharakteren und weiblicher Psyche.” *Pflügers Archiv für die gesammte Physiologie des Menschen und der Thiere* 144 (1912): 72–108.
- Steinach, Eugen, and Guido Holzknacht. “Erhöhte Wirkungen der inneren Sekretion bei Hypertrophie der Pubertätsdrüsen.” *Archiv für Entwicklungsmechanik* 42 (1916): 490–507.
- Steinach, Eugen, and Heinrich Kun. “Antagonistische Wirkungen der Keimdrüsen Hormone.” *Biologia Generalis* 2, no. 7 (1926): 815–34.
- Steinach, Eugen, and Robert Lichtenstern. “Umstimmung der Homosexualität durch Austausch der Pubertätsdrüsen.” *Münchener Medizinische Wochenschrift* 65, no. 6 (February 5, 1918): 145–48.
- Stekel, Wilhelm. *Impotence in the Male: The Psychic Disorders of Sexual Function in the Male*. Translated by Oswald H. Boltz. 2 vols. New York: Liveright, 1927. Originally published as *Die Impotenz des Mannes: Die psychischen Störungen der männlichen Sexualfunktion*. Berlin: Urban & Schwarzenberg, 1923.
- Stern, David G., and Béla Szabados, eds. *Wittgenstein Reads Weininger*. Cambridge: Cambridge University Press, 2005.
- Stoff, Heiko. *Ewige Jugend: Konzepte der Verjüngung vom späten 19. Jahrhundert bis ins Dritte Reich*. Cologne: Böhlau, 2004.
- Stolberg, Michael. “A Woman Down to Her Bones.” *Isis* 94, no. 2 (2003): 274–99.
doi:10.1086/379387.

- Stone, Sandy. "The *Empire* Strikes Back: A Posttranssexual Manifesto." In *Body Guards: The Cultural Politics of Gender Ambiguity*, edited by Kristina Straub and Julia Epstein. New York: Routledge, 1991. Originally published in 1991. <http://sandystone.com/empire>.
- Storr, Merl, ed. *Bisexuality: A Critical Reader*. New York: Routledge, 1999.
- Strindberg, August. "Idolatrie, Gynolatrie (Ein Nachruf)." *Die Fackel* 5, no. 144 (October 17, 1903): 1–3.
- Stryker, Susan. *Transgender History*. Berkeley: Seal Studies, 2008.
- Suloway, Frank J. *Freud, Biologist of the Mind: Beyond the Psychoanalytic Legend*. New York: Basic Books, 1979.
- Surkis, Judith. *Sexing the Citizen: Morality and Masculinity in France, 1870–1920*. Ithaca: Cornell University Press, 2006.
- Szasz, Thomas. "The Medicalization of Sex." *Journal of Humanistic Psychology* 31, no. 3 (1991). doi:10.1177/0022167891313007.
- Tarkhanov, Ivan Romanovich. "Zur Physiologie des Geschlechtsapparates des Frosches." *Archiv für die gesammte Physiologie des Menschen und der Thiere* 40 (1887): 330–51.
- Taschwer, Klaus, Johannes Feichtinger, Stefan Sienell, and Heidemarie Uhl. *Experimental Biology in the Vienna Prater: On the History of the Institute for Experimental Biology 1902 to 1945*. Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2016.
- Taylor, Michael Thomas. "Magnus Hirschfeld's Institute for Sexual Science as Archive, Museum, and Exhibition." In *Not Straight from Germany: Sexual Publics and Sexual Citizenship Since Magnus Hirschfeld*, edited by Michael Thomas Taylor, Annette F. Timm, and Rainer Herrn, 12–37. Ann Arbor: University of Michigan Press, 2017.

- Taylor, Michael Thomas, Annette F. Timm, and Rainer Herrn, eds. *Not Straight from Germany: Sexual Publics and Sexual Citizenship Since Magnus Hirschfeld*. Ann Arbor: University of Michigan Press, 2017.
- Terry, Jennifer. "The Seductive Power of Science in the Making of Deviant Subjectivity." In *Science and Homosexualities*, edited by Vernon A. Rosario, 271–95. New York: Routledge, 1996.
- "The Pentacle of Rejuvenescence." *The British Medical Journal* 1 (June 22, 1889): 1416.
- The Scientific-Humanitarian Committee. "Petition to the Reichstag." In *We Are Everywhere: A Historical Sourcebook of Gay and Lesbian Politics*, edited by Mark Blasius and Shane Phelan, 135–37. New York: Routledge, 1997.
- "The Steinach Operation for Rejuvenation." *Southern Medical Journal* 18, no. 3 (1925): 224–25.
- Thomalla, Curt. *Der Steinachfilm*. Directed by Curt Thomalla. Austria, 1923.
- Thorek, Max. *A Surgeon's World: An Autobiography*. Philadelphia: Lippincott, 1943.
- Timm, Annette F. "Introduction: Sexual Publics and Sexual Citizenship from Hirschfeld to the Present." In *Not Straight from Germany: Sexual Publics and Sexual Citizenship Since Magnus Hirschfeld*, edited by Michael Thomas Taylor, Annette F. Timm, and Rainer Herrn, 1–8. Ann Arbor: University of Michigan Press, 2017.
- Timms, Edward. *Karl Kraus, Apocalyptic Satirist: Culture and Catastrophe in Habsburg Vienna*. New Haven: Yale University Press, 1986.
- . *Karl Kraus, Apocalyptic Satirist: The Post-War Crisis and the Rise of the Swastika*. New Haven: Yale University Press, 2005.
- Traister, Bryce. "Academic Viagra: The Rise of American Masculinity Studies." *American Quarterly* 52, no. 2 (June 1, 2000): 274–304. doi:10.1353/aq.2000.0025.

- Tsagareli, Merab G. "Ivane Tarkhnishvili (Tarchanoff): A Major Georgian Figure from the Russian Reform School." *Journal of the History of the Neurosciences* 21 (2012): 393–408.
- Tuana, Nancy, ed. *Feminism and Science*. Bloomington: Indiana University Press, 1989.
- Turner, Terry T., Hyun J. Bang, and Jeffrey J. Lysiak. "Experimental Testicular Torsion: Reperfusion Blood Flow and Subsequent Testicular Venous Plasma Testosterone Concentrations." *Urology* 65, no. 2 (2005): 390–94. doi:10.1016/j.urology.2004.09.033.
- Ulrichs, Karl Heinrich. *The Riddle of "Man-Manly" Love: The Pioneering Work on Male Homosexuality*. Translated by Michael A. Lombardi-Nash. 2 vols. Buffalo, N.Y: Prometheus Books, 1994. Originally published as *Forschungen über das Rätsel der mann männlichen Liebe*. 12 vols. 1864–79.
- . "Vier Briefe." *Jahrbuch für sexuelle Zwischenstufen* 1 (1899): 36–70.
- Valentin, Gabriel. "Über die Entwicklung der Follikel in dem Eierstocke der Säugetiere." *Archiv für Anatomie, Physiologie und wissenschaftliche Medicin*, 1838, 526–35.
- Viereck, George Sylvester. *Glimpses of the Great*. New York: Macaulay, 1930.
- . [George F. Corners]. *Rejuvenation: How Steinach Makes People Young*. New York: Seltzer, 1923.
- Visootsak, Jeannie, and John M Graham. "Klinefelter Syndrome and Other Sex Chromosomal Aneuploidies." *Orphanet Journal of Rare Diseases* 1 (October 24, 2006): 42. doi:10.1186/1750-1172-1-42.
- Von Praunheim, Rosa, dir. *Der Einstein des Sex*. Germany: Ventura Film, 1999.

- Von Römer, Lucien S. A. M. "Die erbliche Belastung des Zentralnervensystems bei Uraniern, geistig gesunden Menschen und Geisteskranken." *Jahrbuch für sexuelle Zwischenstufen* 7 (1905): 67–84.
- Vorstand des W.H.K. "Der 175 nicht gefallen!" *Mitteilungen des Wissenschaftlich-humanitären Komitees* 26 (December 1929): 207–8.
- Waidzunas, Tom. *The Straight Line: How the Fringe Science of Ex-Gay Therapy Reoriented Sexuality*. Minneapolis: University of Minnesota Press, 2015.
- Waldeyer, Wilhelm. *Eierstock und Ei. Ein Beitrag zur Anatomie und Entwicklungsgeschichte des Sexualorgane*. Leipzig: Wilhelm Engelmann, 1870.
- Weil, Arthur. "Die Körpermaße der Homosexuellen als Ausdrucksform ihrer besonderen Veranlagung." *Jahrbuch für sexuelle Zwischenstufen* 21, no. 3/4 (1921): 113–20.
- . "Sprechen anatomische Grundlagen für das Angeborenssein der Homosexualität?" *Archiv für Frauenkunde und Konstitutionsforschung* 10 (1924): 23–51.
- Weininger, Otto. *Eros und Psyche: Studien und Briefe, 1899–1902*. Edited by Hannelore Rodlauer. Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1990.
- . *Geschlecht und Charakter. Eine Prinzipielle Untersuchung*. 10th ed. Vienna: Wilhelm Braumüller, 1908. Originally published in 1903.
- . *Sex and Character*. London: W. Heinemann, 1906.
- . *Sex and Character: An Investigation of Fundamental Principles*. Translated by Ladislaus Löb. Bloomington: Indiana University Press, 2005. Originally published as *Geschlecht und Charakter. Eine prinzipielle Untersuchung*. Vienna: Wilhelm Braumüller, 1903.
- Weismann, August. *Das Keimplasma. Eine Theorie der Vererbung*. Jena: Fischer, 1892.

- Wesp, Linda M., and Madeline B. Deutsch. "Hormonal and Surgical Treatment Options for Transgender Women and Transfeminine Spectrum Persons." *Psychiatric Clinics of North America* 40, no. 1 (March 1, 2017): 99–111.
- Whisnant, Clayton J. *Queer Identities and Politics in Germany: A History, 1880–1945*. Columbia University Press, 2016.
- Williams, Henry Smith. *Your Glands and You*. New York: Robert M. McBride & Co., 1936.
- Winter, Jay. *Sites of Memory, Sites of Mourning: The Great War in European History*. Cambridge: Cambridge University Press, 1995.
- Wittgenstein, Ludwig. *Cambridge Letters: Correspondence with Russell, Keynes, Moore, Ramsey, and Sraffa*. Edited by Brian McGuinness and Georg Henrik von Wright. Oxford: Blackwell, 1995.
- Wolff, Charlotte. *Magnus Hirschfeld: A Portrait of a Pioneer in Sexology*. London: Quartet, 1986.